"A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh"

Dissertation

Submitted to the Faculty of Nursing

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL

In partial fulfilment of the requirement for the degree of M.Sc. in Child Health (Paediatric) Nursing

By

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July 2025

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Institutional Human Ethics Committee- Student Research (IHEC-SR)

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Ref Number: IHEC/SR/2024/74 **Date: 1 Feb 2024**

Letter of Permission

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AIIMS, Bhopal Institutional Human Ethics Committee- Student Research (IHEC-SR) in its 9th meeting held on 1 Feb 2024 discussed your proposal titled **A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh. .**

Following members attended the meeting:

Sr No.	Name/Post	Role
1	Prof. Manisha Shrivastava, Prof. & Head, Dept. of Transfusion Medicine, BMHRC, Bhopal	Chairperson
2.	Prof. Rajnish Joshi, Prof. & Head, Dept. of General Medicine, AIIMS Bhopal	Clinician Member
3.	Prof. Amit Agrawal, Prof. & Head, Dept. of Neurosurgery, AIIMS Bhopal	Clinician Member
4.	Prof Sunita Athavale, Prof. & Head, Dept. of Anatomy, AIIMS Bhopal	Pre-Clinical Member
5.	Prof Girish C Bhatt, Professor, Pediatrics , AIIMS Bhopal	Clinical Member
6.	Dr. Sunaina Tejpal Kama, Additional Professor, Dept. of Anesthesiology, AIIMS Bhopal	Clinician Member
7.	Dr. Ujjawal Khurana, Associate Professor, Dept. of Pathology, AIIMS Bhopal	Para -Clinical Member
8.	Mr. Trivesh Goswami, Law Officer, AIIMS Bhopal	Legal Person
9.	Ms. Anjali Singh	Lay Person
10.	Prof. Neelkamal Kapoor, Former Prof & Head, Dept of Pathology, AIIMS Bhopal	Social Scientist
11.	Dr. Ankur Joshi, Additional Professor, Dept. of CFM, AIIMS Bhopal	Member Secretary

The decision of the committee is as follows:

The AIIMS, Bhopal IHEC-SR approves your research protocol. All research related activities must begin only after the date of this approval. The validity of this approval is till two years from the date of issuance. Please submit a closure report / renewal request before expiration of the validity for this approval.

Dr. Ankur Joshi
Member Secretary, AIIMS Bhopal IHEC-SR
Additional Professor, Community and Family Medicine, AIIMS, Bhopal

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ABSTRACT

Introduction

Breastfeeding is universally recognized by the World Health Organization (WHO) as the optimal form of infant nutrition; however, fewer than half of infants under six months are exclusively breastfed for the recommended duration. Despite the known benefits of breastfeeding, a significant proportion of mothers opt for alternative feeding methods, with more than half of mothers of children under five years using bottle feeding globally. The decision to bottle-feed is influenced by a complex interplay of personal, cultural, social, and other factors. This study aimed to explore the key determinants influencing the choice of bottle feeding over breastfeeding among mothers of children under 12 months of age.

Methods

A community-based cross-sectional descriptive design was employed to assess 241 mothers of children under 12 months of age residing in Barkheda Pathani, an area served by the Urban Primary Health Centre (PHC) in Bhopal, Madhya Pradesh, India. Purposive sampling was used to select the participants. Data were collected through interviews using a self-structured, close-ended questionnaire, which was administered in Hindi or English, depending on the participant's preference. The practices and determinants of bottle feeding were analyzed using frequency and percentage distribution, while the association between sociodemographic variables and bottle-feeding determinants was assessed using the Chi-square test.

Results

The study findings revealed that 45.2% of infants were introduced to bottle feeding before six months of age. Convenience was identified as the primary determinant of bottle-feeding, with 61% of mothers agreeing that allowing others to feed the child played a significant role in their decision to bottle-feed. This was closely followed by social influence, cited by 59.7% of mothers, and the choice to bottle-feed at night to avoid sleep disturbances, reported by 58.1%.

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Additionally, 56.4% of mothers noted their unavailability as a contributing factor, while 47.7% were influenced by the easy availability of cow milk, packet milk, or formula. Media and cultural influences played a very minimal role, with only 3.3% and 4.6% acknowledging their impact. Sociodemographic variables of mother were found to have associations with the determinants of bottle feeding at the 0.05 level of significance.

Conclusion

Convenience, social, and situational factors were identified as the key determinants of bottle feeding, while marketing, cultural, and personal factors had the least impact. These findings emphasize the importance of providing tailored educational programs for mothers, their family members, and caregivers to encourage exclusive breastfeeding. It is crucial to address misconceptions and ensure adequate lactation support, particularly for mothers in nuclear families or those from lower socioeconomic backgrounds.

Keywords

"Bottle feeding", "Determinants", "Mothers", "Practices"

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LIST OF ABBREVIATIONS

S. NO.	ABBREVIATION	EXPANSION
1.	AIIMS	All India Institute of Medical Sciences
2.	AWW	Anganwadi Worker
3.	BFHI	Baby-Friendly Hospital Initiative
4.	CHC	Community Health Centre
5.	DHS	Demographic and Health Survey
6.	I-CVI	Item Content Validity Index
7.	IHEC-SR	Institutional Human Ethics Committee - Student Research
8.	IYCF	Infant and Young Child Feeding
9.	LSCS	Lower-Segment Caesarean Section
10.	LOP	Letter of Permission
11.	M.Sc.	Master of Science
12.	MO	Medical Officer
13.	NFHS	National Family Health Survey
14.	NICU	Neonatal Intensive Care Unit
15.	PHC	Primary Health Centre
16.	S-CVI	Scale Content Validity Index
17.	SC	Subcentre
18.	SEM	Socio-Ecological Model
19.	SPSS	Statistical Package for the Social Sciences
20.	UNICEF	United Nations International Children's Emergency Fund
21.	WHO	World Health Organization

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LIST OF SYMBOLS

S. NO.	SYMBOL	EXPANSION
1.	%	Percent/Percentage
2.	>	More than
3.	<	Less than
4.	≤	Less than or equal to
5.	H_0	Null Hypothesis
6.	H_1	Research Hypothesis
7.	N	Sample size
8.	$Z_{(1-\alpha/2)}$	1.96 at 95% Confidence Level
9.	P	Estimated proportion of event of interest
10.	Q	The proportion of the population without the characteristic under consideration
11.	D	Desired margin of error
12.	=	Equal to
13.	p	Level of significance
14.	f	Frequency
15.	&	And

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CHAPTER I

INTRODUCTION

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CHAPTER – I

INTRODUCTION

Background of the Study

Children are among the most vulnerable populations, requiring special attention to their nutritional needs and overall health.[1] The "Convention on the Rights of the Child" declares every infant and child's right to good nutrition, indicating the importance of providing them with the best possible start in life.[2]

As per the recommendations of World Health Organization (WHO), breastfeeding of a neonate needs to be initiated within the first hour of birth. A child must be breastfed exclusively for the first six months of age and complementary feeding should be introduced afterwards while continuing breastfeeding up to two years of age or beyond.[2] This recommendation is based on the understanding that breastfeeding provides essential nutrients and antibodies that protect a child against diseases, promoting optimal growth and development.

Breastfeeding is not only beneficial for the individual child but also important to public health. It is one of the most effective and important measures to safeguard a child's health and prevent the dangers of infection, malnutrition, and other health-related issues. Additionally, breastfeeding has been proven to have long-term health benefits for a child, including lowering the likelihood of obesity, diabetes, and cardiovascular diseases in later life.[3] Increasing the rate of breastfeeding could potentially prevent around 14% of deaths in children aged 0 to 23 months, while enhancing complementary feeding may contribute to preventing at least 6% of mortality in under-five children.[4-6]

Despite all its benefits, global breastfeeding rates remain below WHO recommendations. Fewer than half of the infants under six months are exclusively breastfed, and many children fail to receive sufficient and safe complementary foods.[7] In India, the exclusive breastfeeding

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rate among children between the ages of 0 and 6 months is only 63.7%.[8] This suboptimal breastfeeding practice contributes to the mortality and morbidity of children under five years of age, which highlights the need to understand and address the factors influencing child-feeding practices.[9]

Although measures are taken to raise awareness about the importance and advantages of breastfeeding, inferior feeding practices persist in various communities globally. Bottle feeding serves as a notable example of such practices. It is defined as the practice of feeding any liquid (including breast milk) or semi-solid food to a young child from the bottle with a nipple/teat.[10]

Bottle feeding, especially when not practised correctly, has been found to be associated with substantial risks. Bottle-fed infants are more prone to gain weight rapidly, exposing them to early-onset obesity and long-term metabolic disorders.[11] Additionally, research suggests that bottle-fed infants have a higher incidence of pyloric stenosis compared to those who are exclusively breastfed.[12,13] Other health concerns found to be associated with bottle feeding include an increased risk of developing dental caries, impaired oral-facial development, risk of posterior crossbite and an open bite, etc. Furthermore, improper bottle preparation or inadequate hygiene can be a contributing factor in gastrointestinal infections, ear infections, allergic tendencies, respiratory tract infections, and nutrition-related disorders such as diarrhoea and malnutrition, which are among the leading causes of infant morbidity and mortality.[14,15] Feeding from a bottle is also associated with nipple confusion, which is observed when an infant is introduced to bottle feeding alongside breastfeeding. This often results in the infant refusing to breastfeed, hence making it difficult to latch well and ultimately leading to early cessation of breastfeeding.[16,17]

Despite the disadvantages and health risks associated with bottle feeding, it continues to be widely practised, with 57% of mothers of young children under the age of five using it

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globally.[18] Based on the existing literature, several determinants influence the decision to opt for bottle feeding over breastfeeding among the mothers. Research results indicate that the majority of mothers lack proper knowledge of breastfeeding during the antenatal period.[19] Insufficient breast milk and the perception that breastfeeding does not meet the child's needs are some important determinants of bottle feeding.[20,21] Concerns about preventing cross-infection from the mother and the perception of breastfeeding as a time-consuming activity are also found to be influential.[21] Additionally, issues such as limited time in the workplace and the belief that anyone can feed the child can be the contributing factors.[21,22] Lack of confidence in breastfeeding, lack of time for breastfeeding, embarrassment in breastfeeding in public places, and lack of family support play a significant role.[19,21] Influences from mass media, peer groups, and family members can impact feeding decisions.[21] Child-related determinants of bottle feeding may include premature birth, swallowing difficulties, and hospitalisation.[21,23]

Given the significance of optimal infant nutrition and the persistent practice of bottle feeding, it is essential to investigate the underlying determinants contributing to this issue so that necessary strategies can be established and implemented to promote ideal feeding practices and improve health outcomes.

Need and Justification

The first twelve months of life represent a critical period for the growth and development of a child, during which nutrition plays a pivotal role. Recognizing its importance, WHO and UNICEF advocate for exclusive breastfeeding for the first six months as the ideal feeding practice. Despite these guidelines, the practice remains suboptimal in India. According to National Family Health Survey-5 (NFHS-5) reports, only 63.7% of infants in India under six months are exclusively breastfed and merely 41.8% of children under three years are breastfed within the first hour of birth. In Madhya Pradesh, the exclusive breastfeeding rate is slightly higher at 74.0%, yet this improvement over NFHS-4 figures is not substantial.[8]

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The persistence of inferior feeding practices poses significant risks to an infant's nutritional health and overall development. Undernutrition remains an ongoing public health concern, with about 45% of child deaths worldwide attributed to it.[2] Alarmingly, the situation is particularly severe in India, accounting for approximately one-third of the global burden of malnourished children.[24] Increasing the rate of breastfeeding can prevent malnutrition and could potentially prevent around 14% of deaths in children aged 0 to 23 months.[4–6] While the benefits of breastfeeding are well-documented, alternative feeding practices, such as bottle feeding, are widely prevalent, exacerbating health risks.

Bottle feeding has been found to be associated with numerous health hazards, including obesity, metabolic disorders, respiratory illnesses, gastrointestinal infections, etc.[11,14,15] Among preterm infants, bottle feeding immediately after birth significantly reduces the likelihood of transitioning to breastfeeding post-discharge, further compounding health challenges.[25]

The determinants influencing a mother's choice of bottle feeding are multifaceted. These include sociodemographic factors, cultural beliefs, psychological influences, etc. Common reasons for bottle feeding can include the perception of insufficient breast milk, social pressure from family or neighbours, breast-related health issues, and the need for mothers to return to work.[21,26] Understanding these determinants is vital for developing targeted interventions to promote breastfeeding and reduce the prevalence of bottle feeding.

While studies from developed countries have largely explored determinants influencing infant feeding practices and the impact of bottle feeding on child health outcomes, similar research in India is limited. This disparity in research availability is significant, as the factors influencing infant and child feeding practices may vary between countries due to differences in socio-cultural norms, healthcare systems, and access to resources. Moreover, the existing research primarily focuses on identifying sociodemographic and clinical variables as the determinants

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associated with bottle feeding. There is a need to move beyond merely identifying these associations. Therefore, this study aimed to investigate the spectrum of underlying determinants that influence mothers from diverse sociodemographic backgrounds to choose bottle feeding, addressing a critical gap in understanding the motivations behind this decision.

The need for this study also stemmed from its potential to address critical challenges in public health, healthcare systems, and nursing practice. From a public health perspective, understanding the determinants of bottle feeding is vital for designing targeted interventions to promote exclusive breastfeeding and reduce preventable child morbidity and mortality. Within the healthcare system, this study can provide valuable insights to policymakers and healthcare providers for formulating strategies and implementing breastfeeding-support programs that address the barriers faced by mothers. Since nursing professionals play a crucial role in maternal and child health care, the findings can empower them with evidence-based knowledge to counsel mothers effectively, dispel myths about breastfeeding, and provide support in overcoming challenges such as perceived milk insufficiency or social pressure. This research is, therefore, a crucial step towards improving infant nutrition and overall child health outcomes.

Research Problem

A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh.

Research Questions

1) What are the practices of bottle feeding among the mothers of children less than 12 months of age?
2) What are the various determinants of bottle feeding among the mothers of children less than 12 months of age?

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3) Does any association exist between various sociodemographic variables and the determinants of bottle feeding among the mothers of children less than 12 months of age?

Aim of the Study

This study aimed to identify the determinants that influence mothers from diverse sociodemographic backgrounds to choose bottle feeding for their children under 12 months of age. Discovering these determinants would provide valuable information to healthcare professionals and policymakers to identify gaps in the promotion of breastfeeding and make efforts to promote optimal infant and child nutrition.

Objectives of the Study

1) To assess the bottle-feeding practices among the mothers of children less than 12 months of age.
2) To examine the determinants of bottle feeding among the mothers of children less than 12 months of age.
3) To find out the association between various sociodemographic variables and the determinants of bottle feeding among the mothers of children less than 12 months of age.

Hypotheses

1) **H_0 (Null Hypothesis):** There will be no significant association between various sociodemographic variables and the determinants of bottle feeding among the mothers of children less than 12 months of age at the 0.05 level of significance.
2) **H_1 (Research Hypothesis):** There will be a significant association between various sociodemographic variables and the determinants of bottle feeding among the mothers of children less than 12 months of age at the 0.05 level of significance.

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Assumptions

1) The practices of bottle feeding would vary among the mothers.
2) Various sociodemographic, clinical, and personal determinants would affect the bottle-feeding choices of mothers.

Operational Definition

1) **Bottle Feeding:** "Bottle feeding" is defined as a way of feeding a baby by giving it milk from a bottle with a nipple.[27] In the context of this study, it refers to the practice of using bottles as a mode of feeding children under 12 months of age, either exclusively or partially, with formula, cow milk, packet milk, and/or expressed breast milk.
2) **Determinants:** A determinant is generally understood as "a factor that decides whether or how something happens" or "something that controls or affects what happens in a particular situation."[28] For the purpose of this study, "determinants" refer to the specific reasons/factors influencing the decision to choose bottle feeding over breastfeeding among the mothers of children under 12 months of age from diverse sociodemographic backgrounds. These determinants may include physical, psychosociocultural, occupational, convenience, marketing, personal, and situational factors, which were assessed by administering a self-structured tool.

Delimitations

1) The study is delimited to the mothers of children less than 12 months of age in a specific geographic area of Bhopal, i.e., the area under the urban PHC of Barkheda Pathani, and the findings may not be generalized to a broader population.
2) The participants have been selected from the area under specific urban health centre, excluding rural areas.

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3) Data collection relied on a structured tool that excluded open-ended responses.
4) The data collection tool was available in specific languages (English and Hindi), limiting participation to individuals fluent in those languages only.

Conceptual Framework

In this study, the Socio-Ecological Model (SEM) developed by Urie Bronfenbrenner (1979) was used to serve as the guiding framework for understanding the various determinants of bottle-feeding practices.[29]

Socio-Ecological Model (SEM): The Socio-Ecological Model (SEM) was developed by Urie Bronfenbrenner, an American psychologist, as part of his Ecological Systems Theory in the 1970s. The SEM provides a comprehensive perspective on human behaviour by examining multiple layers of influence, ranging from individual to societal levels. It suggests that an individual's behaviour is shaped not only by personal factors but also by the interactions within their immediate environment, broader social structures, and public policies.

Key Levels of the Socio-Ecological Model:

1) **Individual (Intrapersonal) Level:** This level pertains to personal characteristics that influence behaviour, such as knowledge, attitudes, beliefs, values, and individual experiences. For example, a person's decision to engage in healthy behaviours like exercise or proper nutrition is influenced by their knowledge about health and personal motivations.
2) **Interpersonal Level:** This level focuses on relationships and social networks. It includes family, friends, peers, and other social connections that can influence an individual's behaviour. For example, family support for breastfeeding or peer influence on dietary choices.

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3) **Organizational Level:** This level addresses the role of institutions and organizations such as schools, workplaces, healthcare systems, and other community organizations. These institutions provide resources, structures, and environments that influence behaviours. For example, a workplace providing flexible hours for mothers or a school implementing wellness programs for students.

4) **Community/Environmental Level:** The community level examines the broader social environment where individuals reside. This includes the physical and social environment, as well as community-based organizations and cultural values or norms that can facilitate or hinder healthy behaviours. For example, access to parks and recreational areas, local health clinics, or community support networks for mental health.

5) **Policy Level:** The policy level refers to the overarching laws and policies that influence behaviour. These can include governmental regulations, public health policies, or societal expectations that guide individual and community behaviour. For example, national health policies promoting vaccination, breastfeeding, or laws mandating maternity leave.[29,30]

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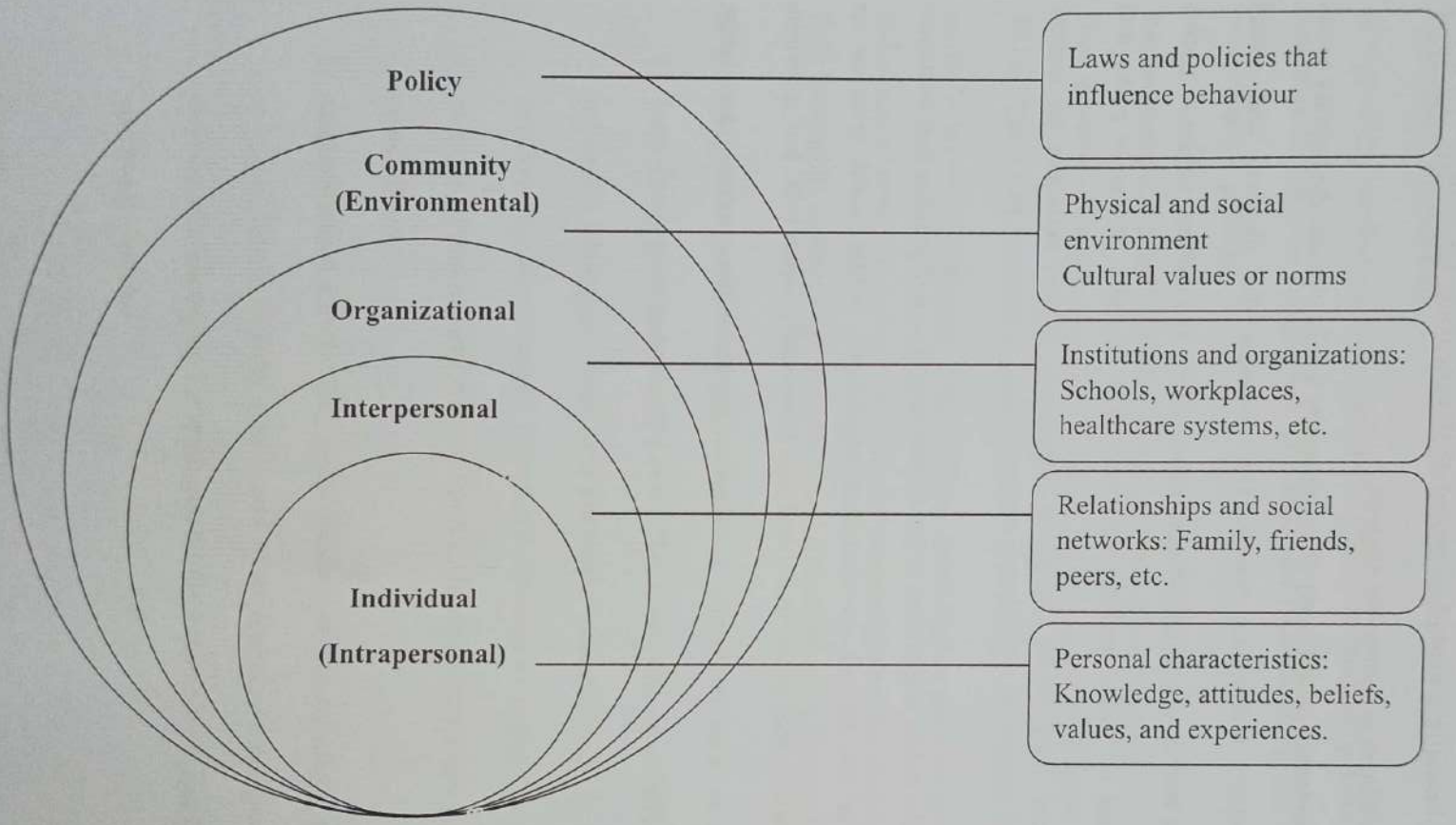

Fig 1: Schematic Illustration of Levels of Socio-Ecological Model (SEM)

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Application of the Socio-Ecological Model (SEM) in the Study: By applying SEM, this study explored the multi-level factors that influence a mother's decision to opt for bottle feeding.

1) **Individual (Intrapersonal) Level:** At the individual level, this study focused on the internal determinants that directly influence a mother's decision-making regarding bottle feeding. These include:
    - Physical determinants such as breast-related issues (e.g., mastitis) and maternal chronic health conditions (e.g., diabetes, infections).
    - Psychological determinants such as maternal stress and emotional challenges.
    - Personal determinants, including lack of knowledge and confidence in breastfeeding, body image concerns, lack of experience in breastfeeding, the desire for the next pregnancy, perception of insufficient milk, and lack of self-determination.
2) **Interpersonal Level:** At this level, the study assessed the determinants that stem from the social relationships and support systems surrounding the mother, which directly affect her bottle-feeding decisions. These include:
    - Social determinants such as influence from family members, friends, relatives, or neighbours, and lack of support from family for breastfeeding.
    - Convenience determinant, i.e., the convenience of allowing anyone to feed with a bottle.
3) **Organizational Level:** In this study, the organizational level includes the occupational determinants of bottle feeding that relate to the mother's work environment, such as:
    - Lack of breastfeeding-friendly facilities or flexible schedules at the workplace.
    - Work-related fatigue.
4) **Community Level:** The study, at this level, assessed the determinants that reflect the societal and cultural influences that shape the bottle-feeding decisions among mothers, including

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cultural beliefs favouring bottle feeding and feelings of embarrassment in public places while breastfeeding.

It also includes situational determinants, such as using the bottle for ease and convenience during travelling and in the unavailability of mother, that represent external environmental factors influencing feeding choices.

5) **Policy Level:** It includes the influence of marketing in promoting bottle-feeding because marketing and media representations are broader societal influences that are often regulated and are external to the immediate environment of the mother.

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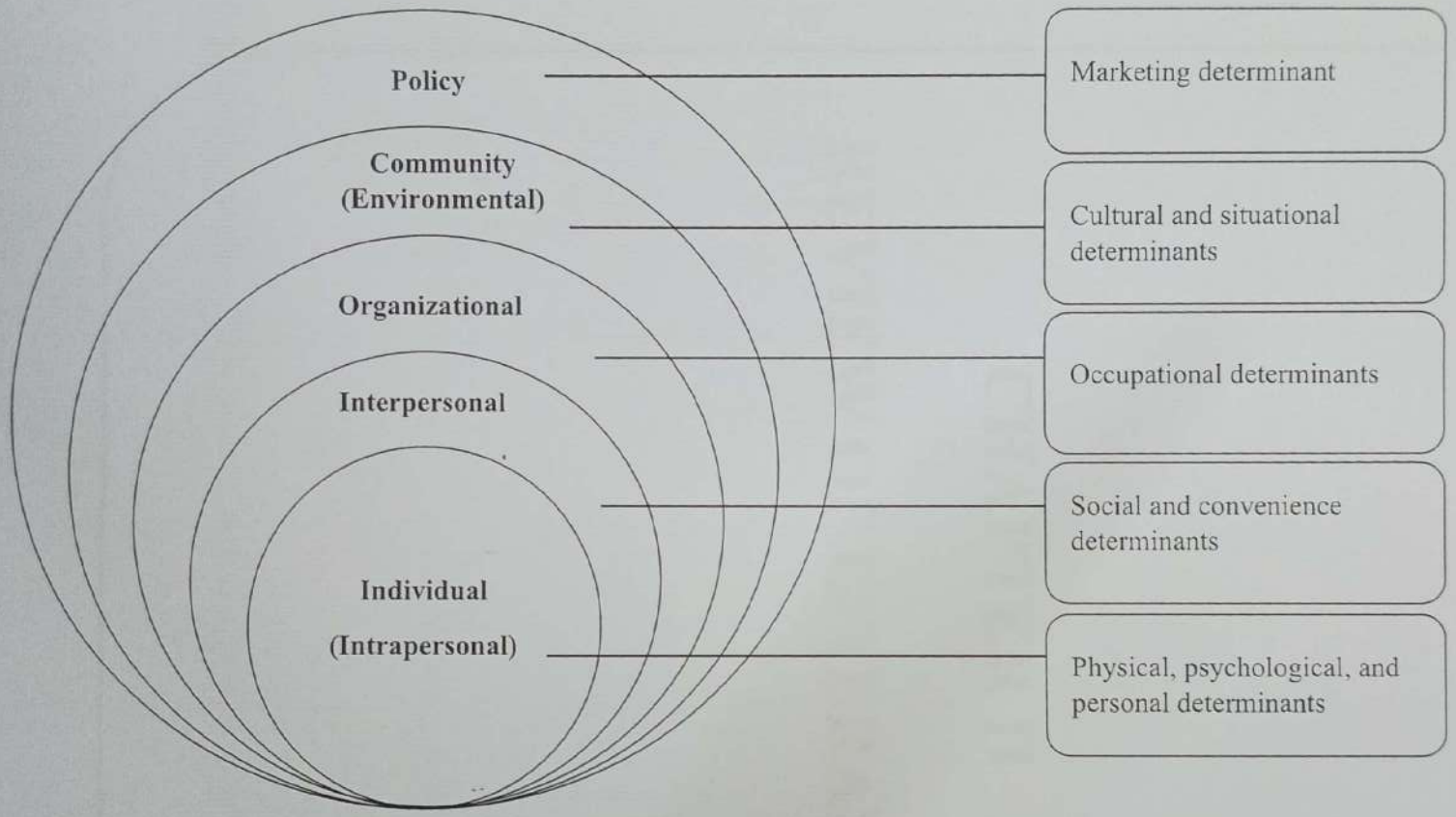

Fig 2: Integration of the Socio-Ecological Model (SEM) into the Study

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Summary

The study's background, need, problem statement, objectives, research questions, assumptions, hypotheses, operational definitions, and conceptual framework are all covered in this chapter.

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CHAPTER II

REVIEW OF LITERATURE

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CHAPTER – II

REVIEW OF LITERATURE

This chapter presents a comprehensive review of existing research studies related to the current study, examining their methodologies, results, and implications.

A comprehensive review of the available literature was conducted across various databases, including PubMed, ResearchGate, ScienceDirect, Google Scholar, and Scopus, utilizing relevant keywords such as "bottle feeding," "determinants," "infant feeding choices," etc.

Table 1: Literature Review Search Strategy

Databases/Platforms	• PubMed • Scopus • ResearchGate • Google Scholar • ScienceDirect	
Key Words	• Feeding practices • Mothers of infants • Bottle feeding • Bottle feeding factors • Bottle feeding determinants • Infant feeding choices • Breastfeeding vs. bottle feeding factors • Parental decisions on bottle feeding • Health concerns with bottle feeding	
Boolean Operators	AND, OR, NOT	
Wildcards	*, ?, " "	
Total Research Studies Found	33	
Studies Included and Excluded	**Included:** 25 Cross-sectional studies: 18 Qualitative studies: 1 Health Surveys: 5 Systematic review and meta-analysis: 1	**Excluded:** 8 • Studies published before 2000. • Studies that didn't match the objectives. • Studies not available in English.

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The resultant literature is organized and presented under the following thematic headings:

1) Literature related to infant feeding practices
2) Literature primarily related to sociodemographic factors shaping feeding choices
3) Literature related to factors influencing bottle feeding choices and practices

1) Literature Related to Infant Feeding Practices

A community-based cross-sectional study was carried out in a rural setting of Kollam, India, to assess the infant and young child feeding (IYCF) practices among the mothers of children in the age group of 0-23 months. Results revealed that most mothers initiated breastfeeding in the early postpartum period, exclusively breastfed their babies, and fed colostrum to their newborns. The IYCF indicators showed acceptable values in the study.[31]

Khan AM et al. conducted research to study the IYCF practices among the mothers of children under two years of age attending an urban health centre in East Delhi, India. It was found that less than half of the children were breastfed within the first hour of birth and more than half of the children under six months of age were exclusively breastfed. The overall status of IYCF practices was poor, necessitating the need to educate mothers and families about correct feeding practices.[32]

Results from a study conducted in Ujjain, India, with the aim of comparing the infant feeding practices among rural and urban mothers and the factors influencing these practices, revealed that around half of the rural mothers offered prelacteal feed to their babies, and a high proportion of urban mothers started breastfeeding within the first hour of birth. Formula feeding was found to be common among urban babies, whereas bottle feeding was more prevalent among rural babies. The study highlighted the need for improved counselling and education, especially in rural areas where feeding practices were identified as poor.[33]

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Swati J et al. conducted a cross-sectional study in selected villages of Madhya Pradesh, India, to assess IYCF practices among 300 mothers of children under two years of age. The majority practised exclusive breastfeeding, with more than half initiating breastfeeding within the first hour of birth. Only a small percentage of mothers used bottle feeding for their children. While breastfeeding rates were generally satisfactory, suboptimal feeding practices were also observed. The study emphasizes the need for strengthening nutritional education during both the antenatal and postnatal periods.[34]

An observational cross-sectional study by Rathaur V in Garhwal, Uttarakhand, India, focused on infant feeding practices and the prevalence of malnutrition. The findings revealed that more than half of the infants were exclusively or partially bottle-fed, indicating the high prevalence of undesirable feeding practices in the community. A significant relationship was found between a longer duration of exclusive breastfeeding and a lower prevalence of underweight and stunting in six-month-old infants.[35]

A secondary data analysis of the National Family Health Survey (2005-06) was carried out among 20,108 children aged 23 months or less to estimate the IYCF indicators and identify the determinants of various feeding practices in India. The results indicated that only a small percentage of mothers began breastfeeding within the first hour after birth, almost all mothers had ever breastfed their infants, the majority were currently breastfeeding, and some were practising bottle-feeding. Estimated rates of timely initiation of breastfeeding were higher among the mothers who had better educational status, had frequent antenatal visits, and were exposed to media such as radio. The factors influencing bottle-feeding choices included delivery via caesarean section, higher wealth index quintiles, working mothers, higher education status of mothers, urban residence, and the lack of postnatal examination. BFHI and IYCF guidelines need to be strengthened in healthcare facilities, and mothers need to be educated on infant nutrition.[36]

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In a clinical-based observational study conducted at a Maternal and Child Health Centre in Mehrauli, Delhi, India, the association between literacy and breastfeeding practices was examined. The results indicated that majority of the mothers breastfed their children; several continued breastfeeding up to six months of age, while only a few percent of mothers continued it beyond one year. Irrespective of literacy status, a large number of mothers practised bottle-feeding for top feeding their children. Out of all the mothers who used feeding containers, around 15% preferred using ash for cleaning. This highlights the need for education on proper sterilization of feeding bottles.[37]

Das N et al. carried out a clinical-based cross-sectional descriptive study among the mothers of children aged 0-23 months in West Bengal, India, with the aim to observe IYCF perceptions and practices. The results of the study revealed that majority of the mothers did not breastfeed within the first hour of birth, around 42% of mothers of children aged six months or more did not exclusively breastfeed, and many bottle-fed their children. More than half of the bottle-feeding mothers stated that it was a convenient method of feeding when they were busy. The inappropriate IYCF practices are still prevailing in various communities. Mothers need to be counselled, and misconceptions related to feeding practices need to be cleared.[38]

A study using data from the 2004 Bangladesh Demographic and Health Survey assessed the determinants of breastfeeding and complementary feeding practices among 2,482 children under two years of age. While nearly all mothers had breastfed at some point, only 28% initiated breastfeeding within the first hour, and exclusive breastfeeding rates among infants under six months were just around 43%. Bottle feeding was practised by nearly 22% of mothers. Factors such as higher maternal education, urban residence, and higher socioeconomic status were linked to lower exclusive breastfeeding rates, while antenatal clinic visits were associated with timely breastfeeding initiation. The study highlights the need for breastfeeding promotion programs, particularly targeting urban working mothers.[39]

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Motee A et al. conducted a study in Mauritius to assess breastfeeding patterns, infant formula use, and weaning practices among 500 mothers using a questionnaire-based survey. The findings showed that breastfeeding prevalence had increased from 72% in 1991 to 93%, yet only 18% of mothers exclusively breastfed for the first six months, with an average exclusive breastfeeding duration of two months. Complementary feeding was commonly introduced between 4–6 months. Key factors influencing infant feeding practices included mode of delivery, parity, maternal education, occupation, alcohol consumption, and breast-related issues. The study emphasizes the need for enhanced breastfeeding support and education to improve exclusive breastfeeding rates.[40]

A study using data from the 2006 Nepal Demographic and Health Survey assessed infant and young child feeding indicators among 1,906 children under two years of age. Breastfeeding was initiated within the first hour in less than half of the cases. Bottle feeding was reported in around 4% of children, and the timely complementary feeding rate among infants aged 6 to 9 months was 78%. Factors influencing feeding practices included antenatal care visits, geographic location, mode of delivery, maternal education, and urban residence. The findings highlight the need for targeted breastfeeding promotion strategies to improve child nutrition and reduce mortality.[41]

2) **Literature Primarily Related to Sociodemographic Factors Shaping Feeding Choices**

A questionnaire-based cross-sectional survey of mothers with children under 5 years of age was conducted at Shree Krishna Hospital of Pramukhswami Medical College, Gujrat, India, in 2013. The study aimed to assess the association of demographic variables with feeding practices. A significant association of maternal literacy with suboptimal feeding practices was found; however, maternal education and occupation had no significant association with initiation and duration of breastfeeding.[42]

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A cross-sectional study in Amritsar, India, examined factors influencing infant feeding practices among mothers in an urban community. Data collected through house-to-house surveys revealed that about 54% of mothers initiated breastfeeding the next day, while only 16% did so immediately. Prelacteal feeding was common, with honey being the most frequently given. More than half of the mothers provided colostrum to their babies. Weaning after six months was reported by 53%, while 47% started it earlier at four months. Maternal education showed a significant association with the timing of weaning. The study highlights the need for health and nutrition programs to promote optimal breastfeeding practices, particularly exclusive breastfeeding.[43]

In 2019, Mihret Y et al. conducted a study among 255 mothers with children under 24 months of age attending the immunization clinic at Woldia General Hospital, Ethiopia, to assess the prevalence of bottle feeding and its association with sociodemographic factors. The study found that the prevalence of bottle feeding was around 43%. Infants aged 0 to 5 months were less likely to be bottle-fed compared to older infants. Mothers aged 35-50 years were less likely to bottle-feed than those in the 15-24 years age group. Additionally, mothers working in farming were more likely to bottle-feed than homemaker mothers.[44]

3) **Literature Related to Factors Influencing Bottle Feeding Choices and Practices**

A cross-sectional study using data from the 2nd Nationwide Survey of Breastfeeding Prevalence in Brazil (2008) analyzed factors associated with the use of pacifiers and bottle feeding among 34,366 infants under one year. The study identified several factors linked to the exclusive use of pacifiers, including maternal employment, primiparity, delayed breastfeeding initiation, and early consumption of tea. Exclusive bottle feeding was associated with similar factors as well as low birth weight and early consumption of formula. The study provides insights to guide preventive measures for promoting healthier feeding practices.[45]

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A qualitative study was conducted in 2015 among mothers of children up to 3 years of age attending Anganwadi or immunization centres in rural, urban, and urban slum areas of Dharwad district, Karnataka, India. The study aimed to explore various bottle-feeding practices among these mothers. The results indicated that bottle feeding was rarely practised. The reasons to opt for bottle feeding included sick mother or breast disease and perceived lack of breast milk. Most mothers preferred formula or cow's milk for bottle feeding, with many opting for commercially available milk packets. Bottle feeding was practised as the last option for some acceptable reasons.[46]

A community-based cross-sectional study was carried out in 2016 among 422 mothers with children aged 0-23 months in Holeta town, Central Ethiopia, with the aim to determine the intention, magnitude, and factors associated with bottle feeding among these mothers. The study results revealed the total prevalence of bottle feeding to be around 20%, with another 28% of mothers having the intention to bottle feed their children. The major reason reported by the mothers for choosing bottle feeding was its convenience in feeding the child. An abundant number of mothers intending to bottle feed their children declared that receiving help from family members or other caregivers for feeding the child was a contributing factor. More than half of the mothers claimed that working outside the home was a reason for bottle feeding their children. In addition, lower maternal age, older age of children, having multiple children under five years, lack of counselling on bottle feeding, and not attending postnatal counselling follow-up were identified to be the factors associated with bottle feeding in the study. The mothers need to be counselled on the importance of breastfeeding in the antenatal and postnatal periods.[22]

A study from Ethiopia conducted by Seid SS in 2018 collected data from 222 mothers having children in the age group of 0-12 months to assess the utilization of bottle-feeding practice and its associated factors. From the total sample, around 93% of the mothers practised bottle

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feeding. The main reason for initiation of bottle feeding was mothers' return to work. Of all the bottle-feeding mothers in the study, around 41% of mothers were illiterate and 45% had monthly income within the range of 1000-1499 Birr. This shows the significant association of bottle feeding with the mother's sociodemographic variables. Community-based educational intervention can be carried out to educate mothers on IYCF guidelines.[26]

Kulkami P carried out a study in 2019 in the paediatric department of G. G. government hospital and one private hospital to assess the determinants of bottle feeding among children aged 0-24 months. The results showed a higher rate of bottle feeding among males than females. The practice was prevalent in all sociodemographic classes but was found to be highest in the upper class. Of all maternal determinants, almost all the mothers did not receive proper education on breastfeeding during the antenatal period and many got inputs from others to start bottle feeding. Other most important determinants of bottle feeding included LSCS delivery, NICU stay of the infants, unsupportive spouse, and having more than two kids.[19]

A study was carried out in 2022 among 692 mothers of children aged 0-24 months with the aim to assess the prevalence of bottle-feeding practice and its associated factors in Asella town, Ethiopia. The prevalence of bottle-feeding practice in the area was found to be 35%, which was somewhat higher when compared with national prevalence. The bottle-feeding rates were higher among the mothers who were government employees, delivered at home, or failed to attend postnatal follow-up. Antenatal and postnatal counselling needs to be strengthened, and mothers need to be educated about IYCF guidelines and risks associated with bottle-feeding infants.[47]

An institution-based study was conducted by Birhan G et al. among mothers who had infants under six months of age, with the aim to assess the prevalence of bottle-feeding practice and its associated factors. The results revealed the overall prevalence of bottle-feeding practice to

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be 39%. The factors identified to be linked with bottle feeding included having a male infant, not having information on bottle feeding practice, insufficient breast milk production, short maternity leave, caesarean delivery, infant hospitalization, and late initiation of breastfeeding. Providing maternal leave for a significant duration can promote breastfeeding among working mothers.[23]

A non-experimental descriptive research study was conducted in Nagpur, India, among 100 mothers of under-five children to identify the factors influencing the use of bottle feeding. The results identified 50 factors, which were divided into two forms, i.e., 38 factors related to mothers and 12 factors related to babies' condition. Some of the factors related to mothers included inadequate breastfeeding, the perception that breastfeeding alone does not meet the child's needs, limited workplace time, etc. The baby-related factors included prematurity, the perception that bottle feeding boosts the immune system, swallowing difficulties, and others. Mothers need to be made aware of the optimal feeding methods to support their infants' growth and development.[21]

Data from the 2013 Namibia Demographic Health Survey (DHS) was used to examine the prevalence of bottle-feeding and its associated factors. The study enrolled last-born children aged 23 months or below, comprising 1926 mother-baby pairs. The results revealed that the prevalence of bottle-feeding in Namibia was around 36%. The reasons for bottle-feeding included working mothers, hospital deliveries, increasing age of the child, higher educational status of the mother, higher wealth index quintile, and urban residence. Healthcare workers need to be trained to provide IYCF counselling.[48]

A cross-sectional community-based study was carried out in Karnataka, India, in 2011 to find out the prevalence of bottle-feeding practice and identify the various sociodemographic factors associated with it. The results showed that the prevalence of bottle-feeding practice was 16%,

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with cow's milk being the commonest component of bottle feeding. In majority of the cases, the decision to bottle-feed was made by the parents. Among all the reasons identified for starting bottle-feeding, inadequate milk secretion was the most commonly cited. To address this, both health and social welfare departments should implement educational programs in various settings to promote optimal IYCF practices.[20]

In 2024, Getachew D et al. conducted a systematic review and meta-analysis to assess the global prevalence of bottle-feeding practices among mothers with children under the age of five and to identify the factors associated with these practices. It revealed that 57% of mothers with children under five globally practice bottle-feeding. The key factors identified to be contributing to this trend included caesarean deliveries, child hospitalizations, maternal employment, insufficient postnatal care, the increasing child's age, urban living, and higher levels of maternal education. These findings necessitate enhancing breastfeeding rates worldwide and improving the nutritional health and survival of young children.[18]

Research Gap

The existing literature on bottle feeding primarily focuses on sociodemographic and clinical variables as determinants, with limited exploration of other influential factors like personal and cultural aspects. Notably, previous studies have consistently shown that bottle feeding is practised across all sociodemographic classes, suggesting that sociodemographic variables alone do not sufficiently explain bottle feeding behaviour. Therefore, this study excluded sociodemographic variables as primary determinants and instead focused on identifying a wide range of other factors influencing bottle feeding practices, targeting only the mothers currently practising bottle feeding. Furthermore, whereas previous research mainly examined the association between bottle feeding practice and sociodemographic variables, this study investigated the relationship of bottle-feeding determinants with the sociodemographic

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variables, aiming to identify why mothers from specific sociodemographic groups choose to practice bottle feeding.

Summary

The chapter presented an extensive review of literature related to the study title, systematically organized under the three thematic headings: literature related to infant feeding practices, literature primarily related to sociodemographic factors shaping feeding choices, and literature related to factors influencing bottle feeding choices and practices. This review delved into the practices of bottle feeding and its associated determinants, providing a foundation for identifying gaps in existing knowledge and guiding the direction of the current study.

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CHAPTER III

MATERIALS & METHODS

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CHAPTER – III

MATERIALS AND METHODS

Research methodology is a systematic approach to solving a research problem through the logical adaptation of various steps. It aids in understanding not only the products of scientific inquiry but also the process itself.[49]

This chapter outlines the research methodology employed in this study, including the research approach, design, setting, sample selection and sampling technique, data collection tool, etc.

Research Approach

The research approach is a step-by-step plan that progresses from broad theoretical assumptions to specific methods of data collection, analysis, and interpretation, providing a clear framework for investigating the preset research questions and achieving study objectives.[50]

A quantitative research approach was utilized to achieve the specified objectives of this study.

Research Design

In this study, a non-experimental descriptive research design was used to examine the determinants of bottle feeding among the mothers of children less than 12 months of age.

Variables

Research Variable: Determinants of bottle-feeding.

Sociodemographic Variables:

- **Mother:** Mother's age, marital status, type of family, education and occupation, and socioeconomic class of the family based on modified Kuppuswamy Scale-2023.
- **Infant:** Age of the infant in completed months and gender of the infant.

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Clinical Variables: Gravida of mother, number of living children, average spacing between two most recent pregnancies or births, counselling about breastfeeding, place of delivery, and mode of delivery.

Research Setting

This study was conducted in the Barkheda Pathani locality, which falls under the jurisdiction of Urban Primary Health Center (PHC) in Bhopal, Madhya Pradesh, India. Barkheda Pathani has a total population of approximately 21,187, with 1,741 individuals under the age of five. The locality is located 2.7 kilometres away from AIIMS, Bhopal.

Population

- **Target Population:** All the mothers bottle feeding their children less than 12 months of age.
- **Accessible Population:** All the mothers bottle feeding their children less than 12 months of age in area under the urban PHC of Barkheda Pathani, Bhopal, Madhya Pradesh, India.

Sample

- **Inclusion Criteria:**
  - All the mothers bottle-feeding their children less than 12 months of age.
  - Mothers willing to participate.
  - Mothers able to understand English or Hindi.
- **Exclusion Criteria:**
  - Mothers having infants born with cleft lip or cleft palate.
  - Mothers who couldn't respond due to cognitive impairment or some other health-related issues.

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- **Sample Size:** Based on the previous research prevalence (19.4%)[33], sample size was estimated by using the formula $\mathbf{N = Z^2_{(1-\alpha/2)}PQ/D^2}$, where,

  N = Sample size

  $Z_{(1-\alpha/2)}$ = 1.96 at 95% Confidence Level

  P = Estimated proportion of event of interest, i.e., the proportion of mothers who practised bottle feeding = 19.4 ÷ 100 = 0.194

  Q = 1 - P = The proportion of the population without the characteristic under consideration, i.e., the proportion of mothers who did not practice bottle feeding = 1 - 0.194 = 0.806

  D = Desired margin of error = 0.05

Therefore, $N = Z^2_{(1-\alpha/2)}PQ/D^2 = [(1.96)^2 \times 0.194 \times 0.806] \div (0.05)^2$

$= 240.27$

$=$ **241** (Rounded for practicality)

Sampling Technique

The researcher employed purposive sampling to select mothers who met the inclusion criteria. The researcher visited households within the community, approached potential participants, and upon consent, collected data using a structured questionnaire.

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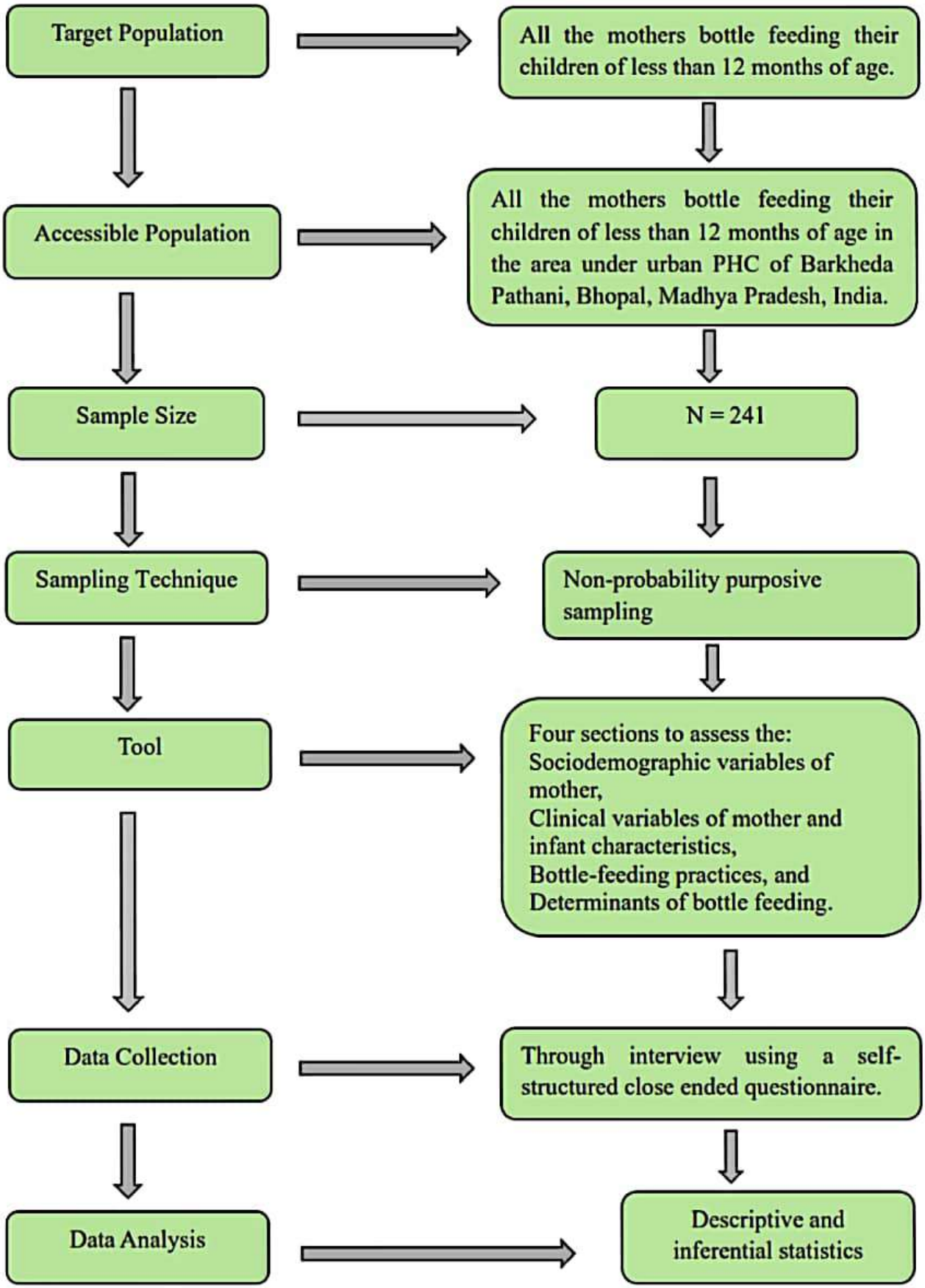
Target Population
All the mothers bottle feeding their children of less than 12 months of age.
Accessible Population
All the mothers bottle feeding their children of less than 12 months of age in the area under urban PHC of Barkheda Pathani, Bhopal, Madhya Pradesh, India.
Sample Size
N = 241
Sampling Technique
Non-probability purposive sampling
Tool
Four sections to assess the:
Sociodemographic variables of mother,
Clinical variables of mother and infant characteristics,
Bottle-feeding practices, and
Determinants of bottle feeding.
Data Collection
Through interview using a self-structured close ended questionnaire.
Data Analysis
Descriptive and inferential statistics

Fig 3: Schematic Representation of Descriptive Research Methodology

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Data Collection Tool

Development and Description of the Tool

A research tool is an instrument or device used by a researcher to collect relevant data, facilitating the achievement of the study's objectives.[51] For the purpose of this study, the following steps were adopted in the development of the tool:

1. Review of literature on determinants of bottle feeding
2. Development of a blueprint of screening tool and self-structured tool
3. Preparation of the first draft of the tool
4. Personal consultation and discussion with guide and co-guides
5. Modification of the tool in accordance with the suggestions from guides and co-guides
6. Preparation of criteria checklist scale for validation of the tool
7. Content validation of the tool
8. Modifications of the tool based on suggestions from the validators
9. Reliability testing of the tool
10. Preparation of the final draft of the tool

The finalized version of the tool included the following:

1) A screening tool to recruit the participants for the study based on preset inclusion and exclusion criteria. (ANNEXURE 1)
2) A self-structured close-ended questionnaire with the following sections: (ANNEXURE 2 and 3)
    a) **Section A (Sociodemographic variables of mother):** This section covered the sociodemographic variables of mother, including six items: age, marital status, type of family, maternal education, maternal occupation, and socioeconomic class of the family based on modified Kuppuswamy Scale-2023.

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b) **Section B (Clinical variables of mother and infant characteristics):** This section encompassed clinical variables of mother and infant characteristics, including eight items: gravida of mother, number of living children, average spacing between two most recent pregnancies or births, age of the infant in completed months, gender of the infant, counselling about breastfeeding, place of delivery, and mode of delivery.

c) **Section C (Bottle feeding practices):** This section addressed various practices of bottle feeding among the mothers. It consisted of seven items.

d) **Section D (Determinants of bottle feeding):** This section focused on 22 self-structured statements to assess the determinants of bottle feeding among mothers. The determinants were divided as:

- Physical determinants: Statement 2, 17, and 20
- Psychosociocultural determinants: Statement 3, 11, 18, 19, and 21
- Occupational determinants: Statement 4 and 13
- Convenience determinants: Statement 1 and 5
- Marketing determinants: Statement 6
- Personal determinants: Statement 7, 8, 12, 14, 15, and 22
- Situational determinants: Statement 9, 10, and 16

Validity and Reliability of the Tool (ANNEXURE 5, 6, and 7)

- **Validity:** Content validity was obtained from nine experts in the field of paediatrics (ANNEXURE 4). The Item Content Validity Index (I-CVI) and the Scale Content Validity Index (S-CVI) were calculated based on the checklist ratings by the experts. The S-CVI for Section A (Sociodemographic variables of mother), Section B (Clinical variables of mother and infant characteristics), Section C (Bottle feeding practices), and

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Section D (Determinants of bottle feeding) was found to be 0.97, 0.98, 0.97, and 0.98, respectively. *The tool was found to be valid.*

- **Reliability:** Reliability is the ability of a research tool to give the same results each time it is used in the same setting with the same type of subjects.[52]

  To evaluate the reliability of section C (Bottle-feeding practices) and section D (Determinants of bottle feeding) of the self-structured tool, a pilot test was conducted among 31 mothers who met the inclusion criteria. Based on the responses collected, internal consistency was calculated with Cronbach Alpha coefficient using SPSS software version 20.0, yielding a value of 0.83 and 0.81 for section C (Bottle-feeding practices) and section D (Determinants of bottle feeding), respectively, which are the acceptable levels of reliability. This confirmed the tool's consistency and stability in measuring the intended construct.

- **Language Translation:** Expert linguists in Hindi and English, respectively, reviewed and validated the English-to-Hindi and Hindi-to-English translations of the tool, confirming its reliability in both languages. (ANNEXURE 8 and 9)

Technique of Data Collection

The participants were selected using a screening tool, ensuring they met the inclusion criteria and did not fall under the exclusion criteria. The data were collected using a self-structured tool that contained a series of close-ended questions relevant to the study objectives. The researcher asked the questions to the participants and recorded the responses accordingly.

Ethical Considerations

The letter of permission (LOP) for the study was taken from the Institutional Human Ethics Committee - Student Research (IHEC-SR), AIIMS, Bhopal (LOP Ref. Number: IHEC/SR/2024/74), on February 01, 2024. Prior to the collection of data, participants were

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made completely aware of the study objectives using participant information sheets (ANNEXURE 11 and 12), ensuring respect for them by acknowledging their autonomy and providing them with the necessary information to make an informed decision. Written informed consent was attained from each study participant after confirming their understanding of the study's purpose, risks, and benefits (ANNEXURE 13 and 14). To maintain confidentiality, participant data was anonymized by using code numbers instead of names, and access to the collected information was limited to the investigator, guide, and co-guides only. Those who declined to participate were not coerced, ensuring justice by treating all participants fairly and without undue influence.

Pilot Study

Pilot study is a preliminary, small-scale investigation conducted to evaluate the practicality, timeline, budget and potential risks of the study, and to identify the areas for improvement in research design prior to the performance of full-scale research project.[53]

In this study, pilot study was conducted in an area under the urban PHC of Barkheda Pathani, Bhopal, Madhya Pradesh. After receiving the necessary permissions, data was collected on June 20-22, 2024 and August 08, 2024 from 31 mothers who met the inclusion criteria. The selected mothers were excluded from the main study to ensure the integrity of the research.

The participants were selected using a screening tool. The questions from the self-structured tool were asked to the selected participants through interviews and the responses were recorded by the researcher. Each participant was interviewed for around 10 to 15 minutes. The pilot study findings indicated that the selected tool and methodology effectively captured the necessary data. Based on the outcomes, it was concluded that the main study was both practical and achievable.

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Challenges Encountered in the Pilot Study and Revisions Made for the Final Study

1) Challenges were encountered in the pilot phase of the study, particularly in specifically identifying mothers with children less than 12 months of age. Additionally, some mothers were reluctant to admit that they bottle-fed their infants, which complicated the recruitment process. These difficulties made it challenging to gather the necessary data and meet the inclusion criteria.

   To address these issues, an Anganwadi worker (AWW) was included in the final study. The AWW played a critical role by assisting in directly identifying the appropriate households and mothers with children less than 12 months of age, thus streamlining the recruitment process. The AWW's familiarity with the community also helped in gaining the trust of participants, making it easier for mothers to admit to bottle-feeding when necessary. This collaboration effectively resolved the challenges and improved the accuracy and efficiency of the data collection in the final study.

2) Also, in the pilot phase of the study, a self-administered, close-ended questionnaire was distributed to literate participants, while the researcher directly administered the questionnaire to illiterate participants through interviews. However, the self-administration method proved time-consuming and posed challenges in ensuring consistent understanding of the questions. Therefore, an interview approach was adopted for the final study, where the researcher directly asked the questions to all participants, regardless of literacy level. This change aimed to reduce participant burden and completion time while facilitating better control over the quality of the data collected.

Procedure of Data Collection

After obtaining the necessary approvals from the ethical committee, the data collection phase commenced on August 19, 2024 and was successfully completed by September 30, 2024. The

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process began with a visit to the PHC in Barkheda Pathani, where contact information for an Anganwadi worker was obtained. This worker assisted by guiding the researcher to the households of mothers with children under 12 months of age.

To ensure a representative sample, data was collected on weekends in addition to weekdays. This approach aimed to include employed mothers who might not have been available during regular weekdays. The timing of data collection also varied on different days to account for differences in availability and to minimize time-of-day effects, such as mood or fatigue.

A total of 260 mothers were screened for the study. Of these, 241 mothers who met the inclusion criteria and were willing to participate were selected. Written informed consent was obtained from each participant after fully disclosing the purpose of the study. The consent process also included seeking permission to enter the participants' homes, as interviews were required to be conducted within their households.

During data collection, the questionnaire/tool was administered in Hindi or English, depending on the participant's preference and understanding. The interview lasted approximately 10 to 15 minutes for most of the participants. Pauses were occasionally taken when necessary, particularly when infants cried or other interruptions occurred, which might have increased the data collection time for some mothers. In some cases, mothers were approached more than once to ensure accurate and complete participation. Reasons for this included circumstances where initial interviews were interrupted or when mothers were initially unavailable. Responses were recorded accurately, ensuring data integrity and confidentiality. On each day, data was collected from an average of five to six participants.

Plan for Data Analysis

Using SPSS version 20.0, the data was analyzed using both descriptive and inferential statistics.

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The normality of the data was assessed using the Kolmogorov-Smirnov test, and the results indicated that the data were not normally distributed. To describe the sociodemographic variables, clinical variables, and infant characteristics, frequency and percentage distribution were calculated. Frequency and percentage distribution were also analyzed to assess the bottle-feeding practices and to identify the determinants of bottle feeding. Chi-square test was used to find out the association between the sociodemographic variables of mothers and the determinants of bottle feeding.

Summary

The chapter covered the research approach, design, variables under study, research setting, inclusion and exclusion criteria for population, sample size, sapling technique, description of the data collection tool, validity and reliability of the tool, language translation of the tool, ethical considerations, details of the pilot study, procedure of the data collection, and plan for data analysis.

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CHAPTER IV

RESULTS

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CHAPTER – IV

RESULTS

This chapter presents an analysis and interpretation of the data obtained from participating mothers of infants under 12 months of age (ANNEXURE 15). The information gathered through a self-structured questionnaire was analyzed using descriptive and inferential statistical methods addressing the objectives and hypotheses of the study. Statistical analysis was carried out utilizing IBM SPSS version 20.0.

Organization and Presentation of Data

The study findings are organized into the following sections:

Section – I: Sociodemographic profile of mothers

Section – II: Clinical profile of mother and infant characteristics

Section – III: Patterns of bottle-feeding practices among the mothers

Section – IV: Determinants of bottle feeding

Section – V: Association of sociodemographic variables of mother with the determinants of bottle feeding

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Section – I

Sociodemographic profile of mothers

Table 2: Frequency and percentage distribution of sociodemographic variables of mothers

(Percentages have been rounded to one decimal point and may not add up to 100%)

N = 241

S. No.	Sociodemographic Variables	Category	Frequency (f)	Percentage (%)
1.	Age in years	Less than 21	41	17.0
		21-30	159	66.0
		31-40	40	16.6
		More than 40	1	0.4
2.	Marital status	Married	239	99.2
		Divorced	0	0.0
		Widowed	2	0.8
3.	Type of family	Nuclear	173	71.8
		Joint	67	27.8
		Extended	1	0.4
		Other	0	0.0
4.	Occupation of mother	Homemaker	168	69.7
		Government employee	18	7.5
		Private sector employee	42	17.4
		Self-employed	11	4.6
		Other	2	0.8
5.	Education status of mother	No formal education	96	39.9
		Primary education (Up to 5th standard)	48	19.9
		Secondary or higher secondary education (Up to 12th standard)	50	20.7
		Higher education	47	19.5

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6.	**Socioeconomic class of the family based on modified Kuppuswamy Socioeconomic Scale-2023**	Upper (I)	0	0.0
		Upper middle (II)	37	15.4
		Lower middle (III)	92	38.2
		Upper lower (IV)	96	39.8
		Lower (V)	16	6.6

Table 2 indicates that the majority of mothers were between 21 and 30 years of age (66.0%), with most living in nuclear families (71.8%). A significant portion were homemakers (69.7%). Education levels varied, with 39.9% of mothers having no formal education. Most of the families were in the upper lower (39.8%) and lower middle (38.2%) socioeconomic classes, indicating a predominantly lower socioeconomic background among the participants.

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Section – II

Clinical profile of mother and infant characteristics

Table 3: Frequency and percentage distribution of clinical variables of mothers and infant characteristics

(Percentages have been rounded to one decimal point and may not add up to 100%)

N = 241

S. No.	Clinical variables of mother and infant characteristics	Category	Frequency (f)	Percentage (%)
1.	Gravida	Primigravida	86	35.7
		Multigravida	147	61.0
		Grand multigravida	8	3.3
2.	Number of living children	1	99	41.1
		2	91	37.8
		3	48	19.9
		More than 3	3	1.2
3.	Average spacing between two most recent pregnancies or births	Less than 2 years	48	20.0
		>2 and ≤3 years	75	31.1
		>3 years	30	12.4
		NA* (Primigravida)	88	36.5
4.	Age of the infant in completed months	0 to 3	30	12.4
		4 to 6	36	14.9
		7 to 9	97	40.3
		10 to <12	78	32.4
5.	Gender of the infant	Male	115	47.7
		Female	126	52.3
		Other	00	0.0
6.	Counselling about breastfeeding	Yes, received in the antenatal period only	17	7.1
		Yes, received in the postnatal period only	158	65.6
		Yes, received in both antenatal and postnatal period	53	21.9

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		No, did not receive it at all	13	5.4
7.	**Place of delivery**	Home	2	0.8
		SC/PHC/CHC	36	15.0
		Hospital	203	84.2
		Other: Please specify	00	0.0
8.	**Mode of delivery**	Normal vaginal delivery	103	42.7
		Caesarean-section	108	44.8
		Assisted vaginal delivery	30	12.5

**NA: Not Applicable*

Table 7 highlights the maternal clinical variables and infant characteristics. Most of the mothers were multigravida (61.0%), with the majority having only one living child (41.1%). Birth spacing of 2 to 3 years was most common (31.1%). Infants were mainly aged 7 to 9 months (40.3%) and almost evenly split between genders, with a slightly higher proportion of females (52.3%). Breastfeeding counselling was primarily received in the postnatal period (65.6%), and the majority of the mothers (84.2%) had delivered in hospital settings, predominantly via C-section (44.8%).

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Section – III

Patterns of bottle-feeding practices among the mothers

Table 4: Frequency and percentage distribution of bottle-feeding practices

(Percentages have been rounded to one decimal point and may not add up to 100%)

N = 241

S. No.	Bottle feeding practices	Category	f	%
1.	Type of feeding practised for the infant currently	Bottle feeding only	4	1.7
		Bottle feeding along with breastfeeding only	65	27.0
		Bottle feeding along with breastfeeding and other foods	135	56.0
		Bottle feeding and other foods without breastfeeding	37	15.3
2.	Time of initiation of bottle feeding	Immediately after birth	36	14.9
		Before 6 months of age	73	30.3
		After 6 months of age	132	54.8
3.	Duration of bottle feeding	0 to 3 months	175	72.6
		4 to 6 months	47	19.5
		7 to 9 months	18	7.5
		10 to <12 months	1	0.4
4.	Frequency of bottle feeding per day	1-2 times	78	32.4
		3-4 times	100	41.5
		5-6 times	58	24.0
		More than 6 times	5	2.1
5.	Type of feed given with bottle	Breast milk	00	0.0
		Cow milk or Packet milk	133	55.2
		Formula feed	54	22.4
		Mixed feed	54	22.4
6.	Frequency of bottle cleaning	After every feeding	181	75.1
		Only in the morning and the evening	2	0.8
		Only when spoiled	58	24.1
		Only once a day	00	0.0

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7.	**Techniques used to clean the bottle**	Boiling	214	88.8
		Rising with soap and water	9	3.8
		Only rinsing with water	2	0.8
		Rinsing followed by boiling	16	6.6

Table 4 outlines the key trends in bottle-feeding practices. Most infants (56.0%) received a mix of bottle feeding, breastfeeding and other foods. While 54.8% of infants started bottle feeding after six months, a considerable proportion (45.2%) were introduced to it earlier, before reaching six months of age. The duration of bottle feeding was primarily 0-3 months (72.6%), and most infants were bottle-fed 3 to 4 times a day (41.5%). Cow milk or Packet milk was most commonly fed with bottles (55.2%), while breast milk was not used. Bottles were typically cleaned after every use (75.1%), mainly by boiling (88.8%).

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Section – IV

Determinants of bottle feeding

Table 5: Frequency and percentage distribution of determinants of bottle feeding

(Percentages have been rounded to one decimal point and may not add up to 100%)

N = 241

S. No.	Statement/Determinant	Response	Frequency (f)	Percentage (%)
1.	The easy availability of cow milk, packet milk, or formula feed impacts my decision of bottle feeding the infant.	Disagree	102	42.3
		Somewhat Disagree	18	7.5
		Neither Agree nor Disagree	6	2.5
		Somewhat Agree	8	3.3
		Agree	107	44.4
2.	Opting for bottle feeding became my preferred choice when I faced breast-related challenges like abscess, mastitis, sore nipples, or inverted nipples.	Disagree	182	75.5
		Somewhat Disagree	1	0.4
		Neither Agree nor Disagree	10	4.1
		Somewhat Agree	4	1.7
		Agree	44	18.3
3.	Cultural beliefs favouring bottle-feeding exist in my community that affect my feeding choices.	Disagree	163	67.6
		Somewhat Disagree	17	7.1
		Neither Agree nor Disagree	50	20.7
		Somewhat Agree	7	2.9
		Agree	4	1.7
4.	Lack of breastfeeding-friendly facilities like privacy, flexible work schedule at my workplace, etc. affect my feeding choices making me opt for bottle feeding.	Disagree	183	75.9
		Somewhat Disagree	4	1.7
		Neither Agree nor Disagree	9	3.7
		Somewhat Agree	9	3.7
		Agree	36	14.9
5.		Disagree	46	19.1

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	The ease of allowing anyone to feed with a bottle contributes to my choice of feeding method.	Somewhat Disagree	26	10.8
		Neither Agree nor Disagree	22	9.1
		Somewhat Agree	28	11.6
		Agree	119	49.4
6.	The positive portrayal by mass media made me embrace bottle feeding for its advantages and convenience.	Disagree	194	80.5
		Somewhat Disagree	9	3.7
		Neither Agree nor Disagree	30	12.4
		Somewhat Agree	7	2.9
		Agree	1	0.4
7.	Lack of knowledge and confidence makes me hesitant in breastfeeding the infant, making me choose bottle feeding instead.	Disagree	193	80.1
		Somewhat Disagree	9	3.7
		Neither Agree nor Disagree	17	7.1
		Somewhat Agree	6	2.5
		Agree	16	6.6
8.	Concerns about my body image influence my choice of feeding method leading me to bottle feeding.	Disagree	143	59.3
		Somewhat Disagree	18	7.5
		Neither Agree nor Disagree	63	26.1
		Somewhat Agree	16	6.6
		Agree	1	0.4
9.	My decision to opt for bottle feeding, specifically at night, is to prevent sleep disturbances.	Disagree	85	35.3
		Somewhat Disagree	3	1.2
		Neither Agree nor Disagree	13	5.4
		Somewhat Agree	25	10.4
		Agree	115	47.7
10.	The unavailability of the mother impacts the decision to	Disagree	92	38.2
		Somewhat Disagree	6	2.5

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	opt for bottle-feeding the baby in certain situations.	Neither Agree nor Disagree	7	2.9
		Somewhat Agree	14	5.8
		Agree	122	50.6
11.	My family members/relatives/neighbours/ friends played a role in shaping my decision to use bottle feeding for my infant.	Disagree	86	35.7
		Somewhat Disagree	4	1.7
		Neither Agree nor Disagree	7	2.9
		Somewhat Agree	21	8.7
		Agree	123	51.0
12.	My decision to bottle feed the infant was influenced by my next pregnancy or the desire to become pregnant.	Disagree	210	87.1
		Somewhat Disagree	5	2.1
		Neither Agree nor Disagree	22	9.1
		Somewhat Agree	00	0.0
		Agree	4	1.7
13.	Work-related demands cause fatigue that impacts my commitment to breastfeeding.	Disagree	170	70.5
		Somewhat Disagree	15	6.2
		Neither Agree nor Disagree	21	8.7
		Somewhat Agree	6	2.5
		Agree	29	12.0
14.	I lack experience in breastfeeding the infant that makes me go for bottle feeding.	Disagree	185	76.8
		Somewhat Disagree	7	2.9
		Neither Agree nor Disagree	20	8.3
		Somewhat Agree	14	5.8
		Agree	15	6.2
15.	I was not having enough breast milk to feed the baby that made me opt for bottle feeding.	Disagree	110	45.6
		Somewhat Disagree	18	7.5
		Neither Agree nor Disagree	16	6.6
		Somewhat Agree	10	4.1

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		Agree	87	36.1
16.	Ease and convenience of bottle-feeding during traveling impacts my feeding choices.	Disagree	92	38.2
		Somewhat Disagree	16	6.6
		Neither Agree nor Disagree	22	9.1
		Somewhat Agree	24	10.0
		Agree	87	36.1
17.	My infant was born preterm or born with medical condition that influenced my feeding choice.	Disagree	210	87.1
		Somewhat Disagree	2	0.8
		Neither Agree nor Disagree	2	0.8
		Somewhat Agree	00	0.0
		Agree	27	11.2
18.	Stress and emotional challenges contribute to my choice of bottle feeding.	Disagree	149	61.8
		Somewhat Disagree	18	7.5
		Neither Agree nor Disagree	40	16.6
		Somewhat Agree	10	4.1
		Agree	24	10.0
19.	I feel embarrassed among people at work or in public places to breastfeed my infant, which affects my feeding choices.	Disagree	86	35.7
		Somewhat Disagree	16	6.6
		Neither Agree nor Disagree	56	23.2
		Somewhat Agree	9	3.7
		Agree	74	30.7
20.	Chronic health condition like diabetes mellitus, or maternal infection contribute to my decision to bottle feed.	Disagree	196	81.3
		Somewhat Disagree	3	1.2
		Neither Agree nor Disagree	12	5.0
		Somewhat Agree	2	0.8
		Agree	28	11.6
21.		Disagree	71	29.5

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	Lack of support from the family impacts my feeding choices, leading me to choose bottle feeding.	Somewhat Disagree	20	8.3
		Neither Agree nor Disagree	77	32.0
		Somewhat Agree	22	9.1
		Agree	51	21.2
22.	Lack of self-determination influences my choice of feeding, which is why I go for bottle feeding.	Disagree	168	69.7
		Somewhat Disagree	8	3.3
		Neither Agree nor Disagree	41	17.0
		Somewhat Agree	8	3.3
		Agree	16	6.6

**Note:* *For interpretation, "somewhat agree" or "agree" indicated that the respondent acknowledged the statement as a determinant influencing their bottle-feeding decision. So, the term "agreement" or "agreeing" takes into consideration the combined percentage of both "agree" and "somewhat agree".*

Table 5 presents the determinants of bottle-feeding which were divided into two categories, i.e., major determinants having the most significant influence on bottle-feeding decisions among participants and minor determinants with least influence in the decision-making process. From all these, only five determinants in each category were identified based on the combined percentages of responses marked as "Agree" and "Somewhat Agree".

Major Determinants of Bottle-Feeding

The major determinants identified were those with a higher combined percentage of "Agree" and "Somewhat Agree" responses. Based on the findings, 61% of participants indicated that the convenience of allowing anyone to feed the infant with a bottle influenced their decision. Social influence also emerged as a significant determinant, with 59.7% of participants agreeing that their family members, relatives, neighbours, or friends played a role in their decision to bottle-feed. Another major determinant was the desire to prevent sleep disturbances, with

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58.1% of participants choosing bottle-feeding at night for this reason. Additionally, 56.4% of respondents stated that the unavailability of the mother impacted the decision to opt for bottle feeding. Easy availability of cow milk, packet milk, or formula feed also accounted for 47.7% of respondents.

Minor Determinants of Bottle-Feeding

Minor determinants were identified based on the lower combined percentage of "Agree" and "Somewhat Agree" responses. Media portrayals and cultural beliefs were found to be less influential with only 3.3% and 4.6% of participants, respectively, agreeing that these determinants shaped their bottle-feeding decisions. Body image concerns, lack of knowledge or confidence about breastfeeding, and lack of self-determination were cited by 7.0%, 9.1%, and 9.9% of participants, respectively, as determinants contributing to their decision to bottle-feed.

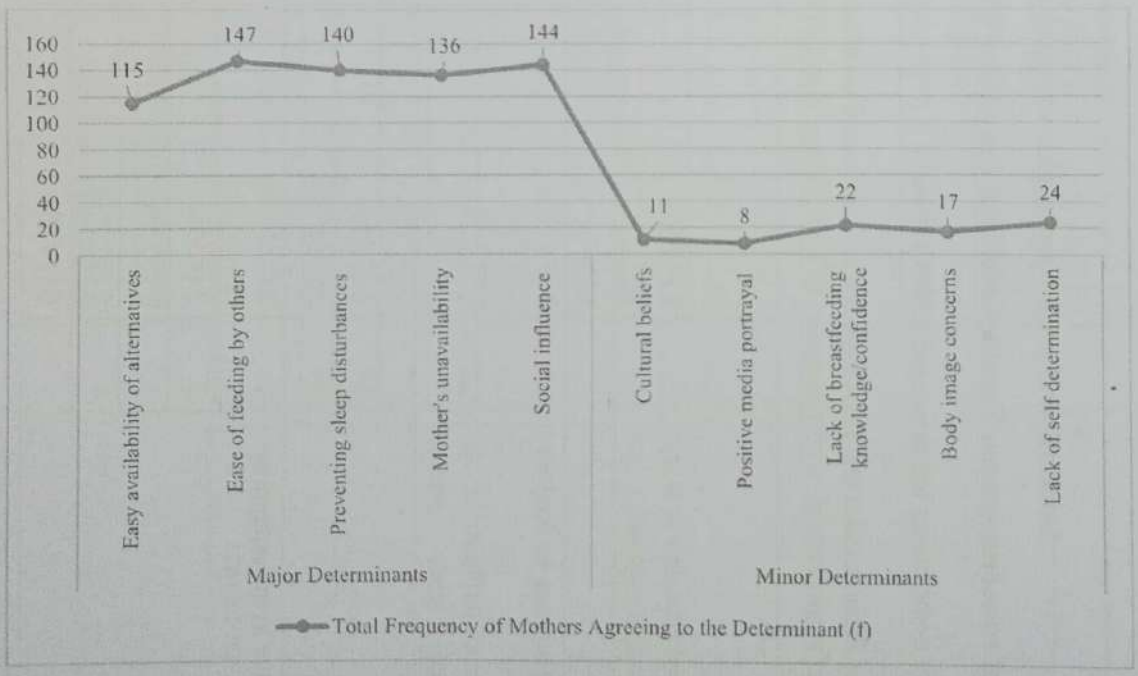

Fig 4: Major and Minor Determinants of Bottle Feeding

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Section – V

Association of sociodemographic variables with the determinants of bottle feeding

The associations of sociodemographic variables with each determinant were analyzed. Given the extensive nature of analysis, only the results showing significant associations are presented in this summary.

Table 6: Results of Fischer exact test indicating the association of sociodemographic variables of mothers with the determinants of bottle feeding (at the 0.05 level of significance), with frequency and percentage distribution

Determinants		Age in Years				p-Value
		Less than 21	21-30	31-40	More than 40	
		Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	
Ease of allowing anyone to feed with bottle	1*	6 (14.6%)	28 (17.6%)	12 (30.0%)	0 (0.0%)	0.003
	2*	8 (19.5%)	18 (11.3%)	0 (0.0%)	0 (0.0%)	
	3*	2 (4.9%)	16 (10.1%)	3 (7.5%)	1 (100.0%)	
	4*	3 (7.3%)	15 (9.4%)	10 (25.0%)	0 (0.0%)	
	5*	22 (53.7%)	82 (51.6%)	15 (37.5%)	0 (0.0%)	
Lack of experience in breastfeeding	1	21 (51.2%)	123 (77.4%)	40 (100.0%)	1 (100.0%)	0.031
	2	2 (4.9%)	5 (3.1%)	0 (0.0%)	0 (0.0%)	
	3	7 (17.1%)	13 (8.2%)	0 (0.0%)	0 (0.0%)	
	4	5 (12.2%)	9 (5.7%)	0 (0.0%)	0 (0.0%)	
	5	6 (14.6%)	9 (5.7%)	0 (0.0%)	0 (0.0%)	

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Determinant		Education				p-Value
		No formal education	Primary education	Secondary or higher secondary	Higher education	
		Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	
Unavailability of the mother	1	45 (46.9%)	20 (41.7%)	13 (26.0%)	14 (29.8%)	0.007
	2	6 (6.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	3	2 (2.1%)	0 (0.0%)	2 (4.0%)	3 (6.4%)	
	4	7 (7.3%)	3 (6.3%)	4 (8.0%)	0 (0.0%)	
	5	36 (37.5%)	25 (52.1%)	31 (62.0%)	30 (63.8%)	
Social influence from family members, relatives, neighbours, or friends	1	31 (32.3%)	10 (20.8%)	25 (50.0%)	20 (42.6%)	0.029
	2	4 (4.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	3	1 (1.0%)	2 (4.2%)	2 (4.0%)	2 (4.3%)	
	4	5 (5.2%)	8 (16.7%)	4 (8.0%)	4 (8.5%)	
	5	55 (57.3%)	28 (58.3%)	19 (38.0%)	21 (44.7%)	
Feeling of embarrassment in breastfeeding among people at work or in public places	1	34 (35.4%)	22 (45.8%)	17 (34.0%)	13 (27.7%)	0.001
	2	9 (9.4%)	2 (4.2%)	1 (2.0%)	4 (8.5%)	
	3	32 (33.3%)	7 (14.6%)	7 (14.0%)	10 (21.3%)	
	4	2 (2.1%)	1 (2.1%)	6 (12.0%)	0 (0.0%)	
	5	19 (19.8%)	16 (33.3%)	19 (38.0%)	20 (42.6%)	

Determinants		Occupation					p-Value
		Homemaker	Government employee	Private sector employee	Self-employed	Other	
		Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	
	1	65 (38.7%)	9 (50.0%)	23 (54.8%)	3 (27.3%)	2 (100.0%)	<0.001

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Easy availability of cow milk, packet milk, or formula feed	2	11 (6.5%)	3 (16.7%)	4 (9.5%)	0 (0.0%)	0 (0.0%)	
	3	4 (2.4%)	0 (0.0%)	2 (4.8%)	0 (0.0%)	0 (0.0%)	
	4	4 (2.4%)	0 (0.0%)	0 (0.0%)	4 (36.4%)	0 (0.0%)	
	5	84 (50.0%)	6 (33.3%)	13 (31.0%)	4 (36.4%)	0 (0.0%)	
Lack of breastfeeding-friendly facilities like privacy or flexible work schedule at workplace	1	167 (99.4%)	2 (11.1%)	14 (33.3%)	0 (0.0%)	0 (0.0%)	<0.001
	2	1 (0.6%)	0 (0.0%)	1 (2.4%)	2 (18.2%)	0 (0.0%)	
	3	0 (0.0%)	0 (0.0%)	7 (16.7%)	2 (18.2%)	0 (0.0%)	
	4	0 (0.0%)	1 (5.6%)	6 (14.3%)	2 (18.2%)	0 (0.0%)	
	5	0 (0.0%)	15 (83.3%)	14 (33.3%)	5 (45.5%)	2 (100.0%)	
Ease of allowing anyone to feed with bottle	1	26 (15.5%)	8 (44.4%)	11 (26.2%)	1 (9.1%)	0 (0.0%)	<0.001
	2	22 (13.1%)	0 (0.0%)	2 (4.8%)	2 (18.2%)	0 (0.0%)	
	3	19 (11.3%)	0 (0.0%)	3 (7.1%)	0 (0.0%)	0 (0.0%)	
	4	13 (7.7%)	4 (22.2%)	5 (11.9%)	6 (54.5%)	0 (0.0%)	
	5	88 (52.4%)	6 (33.3%)	21 (50.0%)	2 (18.2%)	2 (100.0%)	
Prevention of sleep disturbances at night	1	39 (23.2%)	12 (66.7%)	28 (66.7%)	4 (36.4%)	2 (100.0%)	<0.001
	2	3 (1.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	3	7 (4.2%)	2 (11.1%)	4 (9.5%)	0 (0.0%)	0 (0.0%)	
	4	19 (11.3%)	2 (11.1%)	0 (0.0%)	4 (36.4%)	0 (0.0%)	
	5	100 (59.5%)	2 (11.1%)	10 (23.8%)	3 (27.3%)	0 (0.0%)	
Unavailability of the mother	1	90 (53.6%)	0 (0.0%)	2 (4.8%)	0 (0.0%)	0 (0.0%)	<0.001
	2	6 (3.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	3	5 (3.0%)	2 (11.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	4	12 (7.1%)	2 (11.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	5	55 (32.7%)	14 (77.8%)	40 (95.2%)	11 (100.0%)	2 (100.0%)	
	1	48 (28.6%)	10 (55.6%)	20 (47.6%)	6 (54.5%)	2 (100.0%)	<0.001
	2	4 (2.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	3	5 (3.0%)	0 (0.0%)	0 (0.0%)	2 (18.2%)	0 (0.0%)	

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Social influence from family members, relatives, neighbours, or friends	4	9 (5.4%)	0 (0.0%)	10 (23.8%)	2 (18.2%)	0 (0.0%)	
	5	102 (60.7%)	8 (44.4%)	12 (28.6%)	1 (9.1%)	0 (0.0%)	
Work-related demands causing fatigue	1	153 (91.1%)	5 (27.8%)	6 (14.3%)	6 (54.5%)	0 (0.0%)	<0.001
	2	4 (2.4%)	1 (5.6%)	8 (19.0%)	2 (18.2%)	0 (0.0%)	
	3	10 (6.0%)	2 (11.1%)	7 (16.7%)	2 (18.2%)	0 (0.0%)	
	4	1 (0.6%)	0 (0.0%)	2 (4.8%)	1 (9.1%)	2 (100.0%)	
	5	0 (0.0%)	10 (55.6%)	19 (45.2%)	0 (0.0%)	0 (0.0%)	
Determinant		**Socioeconomic Status**					**p-Value**
		Lower	Upper lower	Lower middle	Upper middle	Upper	
		Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	Frequency (Percentage)	
Lack of breastfeeding-friendly facilities like privacy or flexible work schedule at workplace	1	20 (54.1%)	67 (72.8%)	81 (84.4%)	15 (93.8%)	0 (0.0%)	0.045
	2	1 (2.7%)	1 (1.1%)	2 (2.1%)	0 (0.0%)	0 (0.0%)	
	3	2 (5.4%)	4 (4.3%)	3 (3.1%)	0 (0.0%)	0 (0.0%)	
	4	3 (8.1%)	6 (6.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
	5	11 (29.7%)	14 (15.2%)	10 (10.4%)	1 (6.3%)	0 (0.0%)	
Ease of allowing anyone to feed with bottle	1	14 (37.8%)	19 (20.7%)	13 (13.5%)	0 (0.0%)	0 (0.0%)	0.013
	2	1 (2.7%)	13 (14.1%)	11 (11.5%)	1 (6.3%)	0 (0.0%)	
	3	2 (5.4%)	12 (13.0%)	7 (7.3%)	1 (6.3%)	0 (0.0%)	
	4	5 (13.5%)	12 (13.0%)	10 (10.4%)	1 (6.3%)	0 (0.0%)	
	5	15 (40.5%)	36 (39.1%)	55 (57.3%)	13 (81.3%)	0 (0.0%)	

**1=Disagree, 2=Somewhat disagree, 3=Neither agree nor disagree, 4=Somewhat agree, 5=Agree*

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Table 6 reveals that age, occupation, education, and socioeconomic status were significantly associated with several determinants of bottle feeding at the 0.05 level of significance. This indicates that these demographic and social factors play a key role in influencing the observed determinants.

In contrast, there were no significant associations of marital status and type of family found with the determinants under study. This suggests that these variables may not have a strong influence or relationship with the determinants analyzed.

Hence, the research hypothesis (H_1) was accepted.

Summary

This chapter provided an in-depth analysis of the data obtained from mothers of infants under 12 months, focusing on sociodemographic and clinical profiles, bottle-feeding practices, and the determinants influencing these practices. Associations between sociodemographic variables and these determinants were also explored, addressing the study objectives and hypotheses.

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CHAPTER V

DISCUSSION

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CHAPTER – V

DISCUSSION

This chapter interprets the major findings of the study, connecting them to the study objectives and existing literature. The discussion also explores possible explanations for the findings, identifies the strengths and limitations of the study, discusses the implications, and provides recommendations for future research.

The major findings of the study are discussed in the following sections:

Section – I: Sociodemographic profile of mother

Section – II: Clinical profile of mother and infant characteristics

Section – III: Patterns of bottle-feeding practices among the mothers

Section – IV: Determinants of bottle feeding

Section – V: Association of sociodemographic variables of mother with the determinants of bottle feeding

Section – I: Sociodemographic profile of mother

Majority of the mothers were aged 21 to 30 years (66%), with a smaller proportion aged less than 21 years (17%) or 31 to 40 years (16.6%). Nearly all participants were married (99.2%), with a small fraction being widowed (0.8%). Most mothers resided in nuclear families (71.8%) and a significant number were homemakers (69.7%). Educationally, 39.9% had no formal education and the rest had varying levels of schooling. The largest proportion of families were in the upper lower class (39.8%), followed closely by the lower middle class (38.2%), with no representation from the upper class.

Section – II: Clinical profile of mother and infant characteristics

Most of the mothers were multigravida (61%), with a notable portion being primigravida (35.7%). Regarding the number of living children, the majority had one (41.1%) or two (37.8%)

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children. Among multiparous mothers, the average spacing between the two most recent pregnancies or births was predominantly >2 to ≤3 years (31.1%). Infants were most commonly aged 7 to 9 months (40.3%) and gender distribution was nearly equal, with a slight predominance of female infants (52.3%) over males (47.7%). Breastfeeding counselling was received primarily in the postnatal period (65.6%), while 5.4% of mothers had received no counselling. Most deliveries had occurred in hospitals (84.2%). Regarding the mode of delivery, Caesarean sections (44.8%) slightly outnumbered normal vaginal deliveries (42.7%), with assisted vaginal deliveries accounting for 12.5%.

Section – III: Patterns of bottle-feeding practices among the mothers

Regarding the type of feeding practised, 56% of families reported combining bottle feeding with both breastfeeding and other foods, while 1.7% relied solely on bottle feeding. The time of initiation of bottle feeding varied, with most families (54.8%) introducing it after six months of age. Notably, 14.9% began the practice immediately after birth, with other 30.3% starting it before six months. In terms of frequency per day, 41.5% of families bottle-fed their infants three to four times daily. Cow milk or packet milk was the most common feed given with the bottle, used by 55.2% of families. No families reported using breast milk in bottles. Hygiene practices showed encouraging trends, with 75.1% of families cleaning bottles after every feeding. The techniques used for cleaning revealed that boiling was the preferred method, employed by 88.8% of families.

Section – IV: Determinants of bottle feeding

The ease of allowing others to feed the infant was the most significant determinant of bottle-feeding, with 61% of mothers acknowledging that the ability to delegate feeding to others significantly influenced their decision. This was closely followed by social influence, cited by 59.7% of mothers, and the choice to bottle-feed at night to avoid sleep disturbances, reported by 58.1%. Additionally, 56.4% of mothers noted their unavailability as a contributing factor,

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while 47.7% were influenced by the easy availability of cow milk, packet milk, or formula feed. Media portrayals and cultural beliefs supporting bottle-feeding had minimal influence, with only 3.3% and 4.6% of participants acknowledging their impact, respectively. Similarly, concerns about body image (7.0%), lack of breastfeeding knowledge or confidence (9.1%), and lack of self-determination (9.9%) were less significant determinants in the decision to bottle-feed.

To sum up, the study identified convenience, social, and situational factors as the primary determinants of bottle feeding, while marketing, cultural, and personal factors were found to have the least influence.

Section – V: Association of sociodemographic variables of mother with the determinants of bottle feeding

- Age, occupation, education status, and socioeconomic status were found to have a statistically significant association with certain determinates of bottle feeding ($p<0.05$).
- Marital status and type of family were found to have statistically no significant association with the determinants of bottle feeding.

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Discussion

With the aim to examine the practices and determinants of bottle feeding, the current study gathered information from 241 mothers with children under 12 months of age from the area of Barkheda Pathani, Bhopal, Madhya Pradesh. Bottle feeding practices varied among the mothers. Convenience, social, and situational factors were identified as the major determinants of bottle feeding, while marketing, cultural, and personal factors were found to be least influential. Significant associations were found between the sociodemographic variables of mother and the determinants of bottle feeding.

In the current study, the majority of bottle-feeding mothers belonged to the age group of 21 to 30 years (66%), which aligns with findings from an Indian study[19] and a survey from Namibia,[48] both reporting the highest rate of bottle-feeding among mothers aged 20 to 34 years. This trend could be due to the fact that this age group represents the peak childbearing years, during which mothers are actively engaged in infant care. The higher rate of bottle feeding among mothers living in nuclear families (71.8%) observed in this study may be attributed to a lack of family support, as evidenced by a study conducted in Mumbai, India, which highlighted family support as a crucial factor in implementing recommended infant nutrition practices.[54] With respect to occupation and education, bottle feeding was highest among homemakers (69.7%) and educated mothers (60.1%) in this study. These findings are consistent with studies by Makwana NK et al.[19] and Kebebe T et al.[22] However, contrasting results regarding occupation were observed in health surveys from India,[36] Bangladesh,[39] and Namibia,[48] along with a study by Yalew et al. in Woldia, Ethiopia,[44] where bottle feeding was more commonly practised by working women. This variation could be due to a higher proportion of mothers engaged in formal employment in those areas compared to the current study setting. The increased workforce participation may lead to greater reliance on bottle feeding due to time constraints, lack of breastfeeding-friendly workplace policies, or limited

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maternity leave. While studies have shown mothers from higher economic backgrounds practising bottle feeding at a higher rate,[39,55] current study found none of the bottle-feeding mothers from the upper class. The disparity may be attributed to the lower socioeconomic class of the families in the study area.

Of all the bottle-feeding mothers in the study, the majority were multigravida (64.3%; including grand multigravida), having more than one child (58.9%). The gender distribution among bottle-fed infants was nearly equal, with a slightly higher proportion of girls, which aligns with the findings of a survey from Namibia.[48] Notably, 94.6% of the bottle-feeding mothers had received counselling about breastfeeding during the antenatal period, postnatal period, or both. Additionally, most bottle-feeding mothers had hospital deliveries (84.2%) and delivered via C-section. This finding is in consonance with studies conducted in India,[19] Ethiopia,[23] Libya,[40] Namibia,[48] and Pakistan.[55,56] The high prevalence of bottle feeding practice among mothers who delivered in hospitals, particularly via C-section, could be attributed to the effects of anaesthesia, post-operative recovery and physical discomfort, especially in the early postpartum period. Despite breastfeeding counselling, practical challenges such as fatigue, inadequate lactation support, or maternal misconceptions about breastfeeding, etc may lead mothers to choose bottle feeding as a convenient alternative.

The most common feeding method reported by mothers in this study was a combination of bottle feeding, breastfeeding, and other foods (56.0%). This suggests that mothers may adopt mixed feeding to ensure their infants receive adequate nutrition. Bottle feeding was predominantly initiated after six months of age (54.8%), aligning with findings from Namibia, which reported an increase in practising bottle feeding as infants grew older.[48] However, a considerable number of infants (45.2%) were introduced to the practice before the age of six months, pointing to a concerning pattern in early infant feeding choices. The duration of bottle feeding was primarily short-term, with 72.6% of infants receiving it for 0–3 months. Cow milk

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or packet milk was the most commonly used feed during bottle feeding (55.2%), consistent with findings from a study by Hunde BM et al., where around 60% of mothers also used cow milk.[47] This preference may be due to the easy availability and affordability of cow milk or packet milk as a substitute for breast milk. Hygiene practices among mothers were generally commendable. A majority (75.1%) cleaned bottles after every use, and 88.8% utilized boiling as the preferred cleaning method. These practices reflect a strong awareness of hygiene and its importance in preventing infections in infants. However, contrasting results were observed in studies from Delhi (India)[37] and Asella (Ethiopia),[47] where only about 42% and 29% of mothers, respectively, used boiling as a method for cleaning bottles. These differences likely stem from variations in socioeconomic conditions, educational levels, and access to essential resources like clean water and heating equipment in those regions.

In this study, 61% of mothers identified convenience as the major determinant of bottle feeding, emphasizing its ability to allow anyone to feed the infant. This finding aligns with a study from Ethiopia, where convenience was similarly highlighted as the primary reason for bottle feeding.[22] However, the Ethiopian study reported a significantly higher percentage (86.6%) of mothers citing this reason, possibly reflecting differences in cultural norms, family structures, or maternal employment patterns between the two settings. Other key determinants of bottle feeding identified in the current study included social influence (59.7%), intention to prevent sleep disturbances (58.1%), unavailability of the mother (56.4%), and the easy availability of alternatives such as cow milk, packet milk, or formula feed (47.7%). In contrast, studies from Nagpur[21] and Delhi[37] in India, Southern Ethiopia,[57] and South Africa[58] reported "perceived insufficient breast milk," "breast-related issues," "soothing a crying child," and "promoting child growth" as major reasons for bottle feeding, respectively. Minor determinants identified in the study included media portrayal (3.3%) and cultural beliefs favouring bottle feeding

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(4.6%). While these influences exist, they appear less significant, possibly due to increased awareness of breastfeeding benefits among people.

The current study found age, occupation, education, and socioeconomic status to be significantly associated with several determinants of bottle feeding at the 0.05 level of significance. In contrast, no significant associations of marital status and type of family were found with the determinants under study. Age was found to be significantly associated with the determinants "ease of allowing anyone to feed with a bottle" ($p = 0.003$) and "lack of experience in breastfeeding" ($p = 0.031$). Mothers in the 31-40 years age group were more likely to agree with the former, while those under 21 years showed a higher percentage of agreement with the latter. Younger mothers, often primigravida, may have less experience with breastfeeding. Regarding education status, significant associations were observed with the determinants like "unavailability of the mother" ($p = 0.007$), "social influence from family members, relatives, neighbours, or friends" ($p = 0.029$), and "feeling of embarrassment among people at work or in public places" ($p = 0.001$). Participants with secondary, primary, and higher education had a higher percentage of agreement with these determinants, respectively. Mothers with primary education may be more influenced by social networks, while those with higher education are more likely to work outside the home where feelings of embarrassment in public or at the workplace may impact breastfeeding, ultimately increasing their reliance on bottle-feeding. Research supports this, showing that public embarrassment (especially among employed mothers) contributes to the early cessation of breastfeeding, accelerates the weaning process, and promotes early bottle feeding.[59–61] When considering occupation, we found its significant associations ($p < 0.001$) with the determinants such as "easy availability of cow milk, packet milk, or formula feed," "ease of allowing anyone to feed with a bottle," "prevention of sleep disturbances at night," and "social influence from family members, relatives, neighbours, or friends." Homemakers were most likely to agree that these factors

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influenced their bottle-feeding choices, which suggests that they may have easier access to cow milk and may lack awareness regarding the significance of breastfeeding. Occupation was also found to be significantly ($p < 0.001$) associated with the determinants such as the "lack of breastfeeding-friendly facilities at work," the "unavailability of the mother," and "work-related demands causing fatigue." Working mothers reported the highest agreement with these determinants, as they may often face challenges in finding adequate time and space for breastfeeding at work. This aligns with existing research indicating that employed mothers frequently encounter workplace barriers such as inadequate lactation facilities and limited break times for milk expression, all of which contribute to the early introduction of bottle feeding.[62–64] In the current study, socioeconomic status was found to be significantly associated with the determinants "lack of breastfeeding-friendly facilities at work" ($p = 0.012$) and "ease of allowing anyone to feed with a bottle" ($p = 0.029$). Respondents from the upper class showed the highest agreement with the former determinant, while those from the lower class agreed more with the latter. Higher-income mothers may have jobs with fewer breastfeeding-friendly facilities at work, while lower-income mothers may find bottle-feeding as a more practical and accessible solution when they need others to help in caring for their child.

To the best of our knowledge, no previous studies have specifically analyzed the associations between sociodemographic variables and bottle-feeding determinants in a similar manner. Hence, direct comparisons with previous studies were limited.

**Note:* *For interpretation, "somewhat agree" or "agree" indicated that the respondent acknowledged the statement as a determinant influencing their bottle-feeding decision. So, the term "agreement" takes into consideration the combined percentage of both "agree" and "somewhat agree".*

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Error Control and Bias Reduction

1) To ensure the reliability and validity of the results, measures were taken to control both Type I and Type II errors. Type I error (false positive) was minimized by setting a strict significance level at 0.05, reducing the likelihood of incorrectly rejecting the null hypothesis. Additionally, to control Type II error (false negative), adequate sample size was calculated prior to data collection.
2) To ensure a more representative sample and reduce potential biases, data was collected on weekends in addition to weekdays. This was done to include mothers who were employed and might not have been available during regular weekdays, thus including mothers from different socioeconomic backgrounds, improving the generalizability of the findings.
3) The timing of data collection also varied on different days to account for differences in availability and to minimize time-of-day effects, such as mood or fatigue, that could have influenced participant responses.

These measures were taken to enhance the external validity of the study, ensuring that the data collected accurately reflects the experiences of a diverse group of mothers.

Strengths of the Study

1) The study results would aid in developing focused interventions to encourage breastfeeding and minimize bottle-feeding practices among the mothers of infants under 12 months.
2) Various determinants influencing bottle-feeding practices were examined in the study, offering a thorough understanding of the contributing elements.
3) The study categorized determinants into major and minor factors, helping healthcare professionals prioritize intervention strategies.

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4) The study analyzed the association of various sociodemographic variables with bottle-feeding determinants, offering valuable insights for tailored interventions.

Limitations of the Study

1) The study used a cross-sectional design and therefore, captured data at one point in time, which limits the ability to track changes over time.
2) Since the study was conducted in an urban area, findings may not be generalizable to rural or semi-urban populations due to differences in lifestyle, healthcare access, cultural practices, etc.
3) A limited sample size may restrict the generalizability of the findings to other populations or areas.
4) The tool used in the study was not a standardized one.
5) Many other determinants that influence bottle feeding decisions among mothers might have remained unexplored.

Implications of the Study

1) The early introduction of bottle feeding before six months of age, along with the preference for cow milk, packet milk or formula feed, calls for nutrition education on the benefits of exclusive breastfeeding and the risks associated with alternative feeding options.
2) The convenience factor of bottle feeding suggests the need for awareness campaigns focusing on practical breastfeeding solutions that align with the busy lifestyles of mothers.
3) Since social influence plays a major role in mothers' decision to opt for bottle feeding, educational programs should target not only mothers but also caregivers and family members to promote and support positive breastfeeding practices.

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4) Given the significant influence of the mother's availability on feeding choices, support systems such as workplace lactation facilities and flexible schedules should be promoted.
5) Since the majority of mothers received breastfeeding counselling postnatally, efforts should be made to enhance antenatal education, particularly through nursing professionals, to ensure early adoption of breastfeeding practices.

Conclusion

The study findings revealed that a significant proportion of infants were introduced to bottle feeding before six months of age. The primary determinant of bottle feeding was the convenience of allowing others to feed the child, followed by influence from the mother's social circle, the desire to prevent sleep disturbances, her unavailability, and the easy availability of cow milk, packet milk, or formula feed. Media portrayals, cultural beliefs supporting bottle feeding, and concerns about body image had minimal influence. Thus, convenience, social, and situational factors were identified as the key determinants of bottle feeding, while marketing, cultural, and personal factors had the least impact.

These findings underscore the importance of implementing targeted educational interventions for mothers as well as family members and caregivers to promote exclusive breastfeeding, address misconceptions, and provide sufficient lactation support, especially for mothers in nuclear families or those from lower socioeconomic backgrounds.

Recommendations

Based on the findings and limitations of the study, the researcher proposes the following recommendations:

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1) Awareness campaigns should emphasize the nutritional benefits of exclusive breastfeeding over formula, cow milk, or packet milk, ensuring mothers make informed choices.
2) Educational interventions may be extended to family members and caregivers to address their influence on feeding choices and encourage a supportive environment for breastfeeding.
3) Workplaces could implement mother-friendly policies such as lactation breaks and privacy to support breastfeeding mothers.
4) Qualitative and mixed-method studies can be carried out for in-depth exploration and understanding of the determinants of bottle feeding.
5) This study aimed to find out the associations between the mother's sociodemographic variables and the determinants of bottle feeding. Future research could explore how these determinants relate to clinical variables of mother and infant characteristics.
6) Comparative studies would help to explore regional variations in bottle-feeding practices and determinants across urban and rural settings.

Summary

The chapter interpreted the key findings of the study, linking and comparing them to the existing literature. It discussed the similar and contrasting results from other studies. The chapter also covered the limitations and implications of the study and provided recommendations for further research.

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ANNEXURES

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ANNEXURE 1
SCREENING TOOL

Screening Tool

1. Date of assessment:
2. Age of the mother (in years):
3. Age of the child (in months):
4. Gender of the child:
5. Do you bottle feed your child? [Yes/No]

   .....
6. Do you understand Hindi or English? [Yes/No]

   .....
7. Is your child born with cleft lip or cleft palate? (Yes/No)

   .....
8. Whether the mother is diagnosed with any cognitive impairment? (Yes/No)

   .....
9. Are you willing to participate in the study?

   .....

Selected for Study: [ ] YES [ ] NO

1. Mother's Name .....
2. Code No. .....
3. Place of Screening.....
4. Contact Number.....
5. Address.....

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ANNEXURE 2
DATA COLLECTION TOOL (ENGLISH)

Description of the Tool

Using pertinent literature, a self-structured tool was developed consisting of four sections: Section A covers sociodemographic variables of mother, Section B encompasses clinical variables of mother and infant characteristics, Section C addresses bottle feeding practices, and Section D focuses on determinants of bottle feeding.

a) **Section-A:** To assess the sociodemographic variables of mother

b) **Section-B:** To assess the clinical variables of mother and infant characteristics.

c) **Section-C:** To assess various bottle-feeding practices among the mothers.

d) **Section-D:** To assess the determinants of bottle feeding.

Instructions: Code No. ☐

- The researcher will ask the questions directly to the mothers utilizing a face-to-face interview questionnaire and record their responses accordingly.
- It is compulsory to answer all the questions given below.
- All the data collected will be used for the research purpose only.
- The confidentiality of all the information will be ensured by disclosing the collected data to the investigator, guide, and the co-guides only.

I. **Section-A:** Sociodemographic variables of mother.

1. Age in years:	a) Less than 21 b) 21-30 c) 31-40 d) More than 40
2. Marital status:	a) Married b) Divorced c) Widowed

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3. Type of family:	a) Nuclear b) Joint c) Extended d) Other
4. Occupation of mother:	a) Homemaker b) Government employee c) Private sector employee d) Self-employed e) Other
5. Education status of mother:	a) No formal education b) Primary education (Up to 5th standard) c) Secondary or higher secondary education (Up to 12th standard) d) Higher education
6. Socio-economic class of the family based on modified Kuppuswamy Socioeconomic Scale-2023:	a) Upper (I) b) Upper middle (II) c) Lower middle (III) d) Upper lower (IV) e) Lower (V)
i. Education status of head of the family:	a) Profession degree b) Graduate c) Intermediate or diploma d) High school certificate e) Middle school certificate f) Primary school certificate g) Illiterate
ii. Occupation of head of the family:	a) Legislators, senior officers and managers b) Professional c) Technicians and associate professionals d) Clerk e) Skilled worker, shop and market sale workers f) Skilled agriculture and fishery workers g) Craft and related trade workers h) Plant and machine operators and assemblers

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	i) Elementary occupation j) Unemployed
iii. **Total monthly income of the family in Rupees:**	a) ≥146,104 b) 109,580-146,103 c) 73,054-109,579 d) 68,455-73,053 e) 63,854-68,454 f) 59,252-63,853 g) 54,651-59,251 h) 45589-54650 i) 36,527-45,588 j) 21,914-36,526 k) 7,316-21,913 l) ≤7,315

II. **Section-B:** Clinical variables of mother and infant characteristics.

1. **Gravida:**	a) Primigravida b) Multigravida c) Grand multigravida
2. **Number of living children:**	a) 1 b) 2 c) 3 d) More than 3
3. **Average spacing between two most recent pregnancies or births:**	a) Less than 2 years b) >2 and ≤3 years c) >3 years d) Not applicable (Primigravida)
4. **Age of the infant in completed months:**	a) 0 to 3 b) 4 to 6 c) 7 to 9 d) 10 to <12
5. **Gender of the infant:**	a) Male b) Female c) Other
6. **Counselling about breast feeding received:**	a) Yes, received in antenatal period only

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	b) Yes, received in postnatal period only c) Yes, received in both antenatal and postnatal period d) No, did not receive at all
7. Place of delivery:	a) Home b) SC/PHC/CHC c) Hospital d) Other: Please specify
8. Mode of delivery:	a) Normal vaginal delivery b) Caesarean-section c) Assisted vaginal delivery

III. **Section-C (Bottle feeding practices):** It includes various practices of bottle feeding among the mothers of children less than 12 months of age.

1. Type of feeding practiced for the infant currently:	a) Bottle feeding only b) Bottle feeding along with breast feeding c) Bottle feeding along with breast feeding and other foods d) Bottle feeding and other foods without breastfeeding
2. Time of initiation of bottle feeding:	a) Immediately after birth b) Before 6 months of age (but not immediately after birth) c) After 6 months of age
3. Duration of bottle feeding:	a) 0 to 3 months b) 4 to 6 months c) 7 to 9 months d) 10 to <12 months
4. Frequency of bottle feeding per day:	a) 1-2 times b) 3-4 times c) 5-6 times d) More than 6 times
5. Type of feed given with bottle:	a) Breast milk b) Cow milk or Packet milk c) Formula feed d) Mixed feed

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6. **Frequency of bottle cleaning:**	a) After every feeding b) Only in the morning and the evening c) Only when spoiled d) Only once a day
7. **Techniques used to clean the bottle:**	a) Boiling b) Rising with soap and water c) Only rinsing with water d) Rinsing followed by boiling

IV. **Section-D:** Determinants of bottle feeding

It comprises of various physical (Statement 2, 17, and 20), psychosociocultural (Statement 3, 11, 18, 19, and 21), occupational (Statement 4 and 13), convenience (Statement 1 and 5), marketing (Statement 6), personal (Statement 7, 8, 12, 14, 15, and 22), and situational (Statement 9, 10, and 16) determinants of bottle feeding.

Participants' responses will be assessed by using a five-point Likert scale with a range from 1 to 5, where 1 represents "Disagree", 2 represents "Somewhat disagree", 3 represents "Neither agree nor disagree", 4 represents "Somewhat agree", and 5 represents "Agree".

Mother's level of agreement will be indicated by placing a tick mark (✓) next to her response.

Statement	Response				
	Disagree (1)	Somewhat disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Agree (5)
1. The easy availability of cow milk, packet milk, or formula feed impacts my decision of bottle feeding the infant.					
2. Opting for bottle feeding became my preferred choice when I faced breast-related challenges like abscess, mastitis, sore nipples, or inverted nipples.					
3. Cultural beliefs favouring bottle-feeding exist in my community that affect my feeding choices.					

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4. Lack of breastfeeding-friendly facilities like privacy, flexible work schedule at my workplace, etc. affect my feeding choices making me opt for bottle feeding.					
5. The ease of allowing anyone to feed with a bottle contributes to my choice of feeding method.					
6. The positive portrayal by mass media made me embrace bottle feeding for its advantages and convenience.					
7. Lack of knowledge and confidence makes me hesitant in breastfeeding the infant, making me choose bottle feeding instead.					
8. Concerns about my body image influence my choice of feeding method leading me to bottle feeding.					
9. My decision to opt for bottle feeding specifically at night is to prevent sleep disturbances.					
10. The unavailability of the mother impacts the decision to opt for bottle-feeding the baby in certain situations.					
11. My family members/relatives/neighbours/friends played a role in shaping my decision to use bottle feeding for my infant.					
12. My decision to bottle feed the infant was influenced by my next pregnancy or the desire to become pregnant.					
13. Work-related demands cause fatigue that impacts my commitment to breastfeeding.					
14. I lack experience in breastfeeding the infant that makes me go for bottle feeding.					
15. I was not having enough breast milk to feed the baby that made me opt for bottle feeding.					

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16. Ease and convenience of bottle-feeding during traveling impacts my feeding choices.					
17. My infant was born preterm or born with medical condition that influenced my feeding choice.					
18. Stress and emotional challenges contribute to my choice of bottle feeding.					
19. I feel embarrassed among people at work or public places to breastfeed my infant that affects my feeding choices.					
20. Chronic health condition like diabetes mellitus, or maternal infection contribute to my decision to bottle feed.					
21. Lack of support from the family impacts my feeding choices, leading me to choose bottle feeding.					
22. Lack of self-determination influence my choice of feeding, which is why I go for bottle feeding.					

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ANNEXURE 3

DATA COLLECTION TOOL (HINDI)

उपकरण

संबंधित साहित्य का उपयोग करते हुए, एक स्व-संरचित उपकरण विकसित किया गया है जिसमें चार खंड शामिल हैं: **"खंड-ए"** माता के सामाजिक-जनसांख्यिकीय विविधता को शामिल करता है, **"खंड-बी"** माता और शिशु विशेषताओं की नैदानिक विविधता को शामिल करता है, **"खंड-सी"** बोतल से दूध पिलाने की प्रथाओं पर विचार करता है, और **"खंड-डी"** बोतल से दूध पिलाने के निर्धारकों पर केंद्रित है।

a) **खंड-ए:** माता के समाजशास्त्रीय विविधता का आकलन करने के लिए।
b) **खंड-बी:** माता और शिशु विशेषताओं के नैदानिक विविधता का आकलन करने के लिए।
c) **खंड-सी:** माताओं के बीच विभिन्न बोतल से दूध पिलाने की प्रथाओं का आकलन करने के लिए।
d) **खंड-डी:** बोतल से दूध पिलाने के निर्धारकों का आकलन करने के लिए।

निर्देश: कोड नं. [ ]

- यह एक स्व-उत्तर प्रश्नावली है, और सभी प्रश्नों का उत्तर माँ द्वारा दिया जाना चाहिए।
- नीचे दिए गए सभी प्रश्नों के उत्तर देना अनिवार्य है।
- एकत्र किए गए सभी डेटा का उपयोग केवल अनुसंधान उद्देश्य के लिए किया जाएगा।
- एकत्रित आंकड़ों को अन्वेषक, मार्गदर्शक और सह-मार्गदर्शकों को ही प्रकट करके सभी सूचनाओं की गोपनीयता सुनिश्चित की जाएगी।

I. **खंड-ए:** माता के समाजशास्त्रीय विविधता।

1. **उम्र (वर्षों में):**	a) 21 से कम b) 21-30 c) 31-40 d) 40 से अधिक
2. **वैवाहिक स्थिति:**	a) शादीशुदा b) तलाकशुदा c) विधवा

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3. परिवार का प्रकार:	a) एकल परिवार b) संयुक्त c) विस्तारित d) अन्य
4. माता का व्यवसाय:	a) गृहिणी b) सरकारी कर्मचारी c) निजी क्षेत्र का कर्मचारी d) स्व-रोजगार e) अन्य
5. माता की शैक्षिक स्थिति:	a) कोई औपचारिक शिक्षा नहीं b) प्राथमिक शिक्षा (5वीं कक्षा तक) c) माध्यमिक या उच्च माध्यमिक शिक्षा (12वीं कक्षा तक) d) उच्च शिक्षा
6. संशोधित कुप्पुस्वामी सामाजिक आर्थिक स्केल-2023 के आधार पर परिवार का सामाजिक-आर्थिक वर्ग:	a) उच्च (I) b) उच्च-मध्यम (II) c) निम्न-मध्यम (III) d) उच्च-निम्न वर्ग (IV) e) निम्न-वर्ग (V)
i. शिक्षा:	a) व्यावसायिक उपाधि b) स्नातक c) इंटरमीडिएट या डिप्लोमा d) हाई स्कूल प्रमाण पत्र e) मिडिल स्कूल प्रमाण पत्र f) प्राथमिक विद्यालय प्रमाण पत्र g) अशिक्षित
ii. परिवार के मुखिया का व्यवसाय:	a) संवैधानिक, वरिष्ठ अधिकारी और प्रबंधक b) पेशेवर c) तकनीकज्ञ और सहयोगी पेशेवर d) लिपिक e) कुशल श्रमिक, दुकान और बाजार बिक्री श्रमिक f) कुशल कृषि और मत्स्य श्रमिक g) शिल्प और संबंधित व्यापार कार्यकर्ता

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	h) संयंत्र और मशीन ऑपरेटर और असेंबलर i) प्राथमिक व्यवसाय j) बेरोज़गार
iii. परिवार की कुल मासिक आय (रुपये में):	a) ≥146,104 b) 109,580-146,103 c) 73,054-109,579 d) 68,455-73,053 e) 63,854-68,454 f) 59,252-63,853 g) 54,651-59,251 h) 45589-54650 i) 36,527-45,588 j) 21,914-36,526 k) 7,316-21,913 l) ≤7,315

II. **खंड-बी:** माता और शिशु विशेषताओं की नैदानिक विविधता:-

1. ग्रेविडा:	a) प्रथमगर्भा b) बहुगर्भा c) अतिबहुगर्भा
2. जीवित बच्चों की संख्या:	a) 1 b) 2 c) 3 d) 3 से अधिक
3. लगातार दो गर्भावस्थाओं या जन्मों के बीच औसत अंतर:	a) 2 वर्ष से कम b) >2 और ≤3 वर्ष c) >3 वर्ष d) लागू नहीं होता (प्रथमगर्भा)
4. पूर्ण महीनों में शिशु की आयु:	a) 0 से 3 b) 4 से 6 c) 7 से 9 d) 10 से <12
5. शिशु का लिंग:	a) पुरुष b) मादा c) अन्य

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6. **स्तनपान के बारे में परामर्श प्राप्त:**	a) हाँ, केवल प्रसवपूर्व अवधि में प्राप्त हुआ b) हाँ, केवल प्रसवोत्तर अवधि में प्राप्त हुआ c) हां, प्रसवपूर्व और प्रसवोत्तर दोनों अवधि में प्राप्त हुआ d) नहीं, बिल्कुल नहीं मिला
7. **डिलीवरी का स्थान:**	a) घर पर b) उपस्वास्थ्य केंद्र /प्राथमिक स्वास्थ्य केंद्र /सामूहिक स्वास्थ्य केंद्र c) चिकित्सालय d) अन्य: कृपया निर्दिष्ट करें
8. प्रसव का तरीका:	a) सामान्य योनि प्रसव b) आपरेशन से c) सहायक योनि प्रसव

III. **सेक्शन-सी (बोतल से दूध पिलाने की पद्धतियां):** इसमें 12 महीने से कम उम्र के बच्चों की माताओं के बीच बोतल से दूध पिलाने की प्रथाओं को शामिल किया गया है।

1. **वर्तमान में शिशु के लिए प्रचलित आहार का प्रकार:**	a) केवल बोतल से दूध पिलाना b) स्तनपान के साथ-साथ बोतल से दूध पिलाना c) स्तनपान और अन्य खाद्य पदार्थों के साथ बोतल से दूध पिलाना d) स्तनपान के बिना बोतल से दूध पिलाना और अन्य खाद्य पदार्थ
2. **बोतल से दूध पिलाने की शुरुआत का समय:**	a) जन्म के तुरंत बाद b) 6 महीने की उम्र से पहले c) 6 महीने की उम्र के बाद
3. **बोतल से दूध पिलाने की अवधि:**	a) 0 से 3 महीने b) 4 से 6 महीने c) 7 से 9 महीने d) 10 से <12 महीने
4. **प्रति दिन बोतल से दूध पिलाने की आवृत्ति:**	a) 1-2 बार b) 3-4 बार c) 5-6 बार d) 6 बार से अधिक

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5. **बोतल के साथ दिए गए फ़ीड का प्रकार:**	a) माता का दूध b) गाय का दूध या पैकेट दूध c) डिब्बा बंद आहार d) मिश्रित फ़ीड
6. **बोतल की सफाई की आवृत्ति:**	a) फीड के बाद हर बार b) केवल सुबह और शाम c) केवल खराब होने पर d) दिन में केवल एक बार
7. **बोतल को साफ करने के लिए इस्तेमाल किये जाने वाला तरीका:**	a) उबालना b) साबुन और पानी के साथ c) केवल पानी से धोना d) धोने के बाद उबालना

IV. **खंड-डी:** बोतल से दूध पिलाने के निर्धारक

इसमें बोतल से दूध पिलाने के विभिन्न निर्धारक भौतिक (कथन 2, 17, 20), मनो-सामाजिक सांस्कृतिक (कथन 3, 11, 18, 19 और 21), व्यावसायिक (कथन 4, 13), सुविधा (कथन 1 और 5), विपणन (कथन 6), व्यक्तिगत (कथन 7, 8, 12, 14, 15 और 22) और स्थितिजन्य (कथन 9, 10 और 16) शामिल हैं।

प्रतिभागियों की प्रतिक्रियाओं का मूल्यांकन 1 से 5 तक की सीमा के साथ पांच-बिंदु लिकर्ट पैमाने का उपयोग करके किया जाएगा, जहां 1 "असहमत" का प्रतिनिधित्व करता है, 2 "कुछ हद तक असहमत" का प्रतिनिधित्व करता है, 3 "न तो सहमत और न ही असहमत" का प्रतिनिधित्व करता है, 4 "कुछ हद तक सहमत" का प्रतिनिधित्व करता है और 5 "सहमत" का प्रतिनिधित्व करता है.

कृपया अपनी प्रतिक्रिया पर टिक मार्क (✓) लगाकर अपने उत्तर को इंगित करें।

कथन	प्रतिक्रिया				
	असहमत (1)	कुछ हद तक असहमत (2)	न सहमत न असहमत (3)	कुछ हद तक सहमत (4)	सहमत (5)
1. गाय के दूध, पैकेट दूध या डिब्बा बंद आहार की आसान उपलब्धता शिशु को बोतल से दूध पिलाने के मेरे निर्णय को प्रभावित करती है.					

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2. बोतल से दूध पिलाने का विकल्प चुनना मेरी प्राथमिकता बन गया जब मुझे फोड़ा, मास्टिटिस, पीड़ादायक निपल या उल्टे निपल्स जैसी स्तन संबंधी चुनौतियों का सामना करना पड़ा.					
3. बोतल से दूध पिलाने के पक्ष में सांस्कृतिक विश्वास मेरे समुदाय में मौजूद हैं जो मेरे भोजन विकल्पों को प्रभावित करते हैं.					
4. स्तनपान-अनुकूल सुविधाओं की कमी जैसे गोपनीयता, मेरे कार्यस्थल लचीली दिनचर्या, आदि मेरे भोजन विकल्पों को प्रभावित करते हैं जिससे मुझे बोतल से दूध पिलाने का विकल्प मिलता है.					
5. क्योंकि कोई भी बोतल से बच्चे को दूध पिला सकता है, इसलिए मैं बोतल से दूध पिलाने का विकल्प चुनती हूं।					
6. मास मीडिया द्वारा सकारात्मक चित्रण ने मुझे इसके फायदे और सुविधा के बारे मैं अवकत करवाया है जिसकी वजह से मैंने बोतल से दूध पिलाने को अपनाया है.					
7. ज्ञान और आत्मविश्वास की कमी मुझे शिशु को स्तनपान कराने में संकोच कराती है, जिससे मुझे इसके बजाय बोतल से दूध पिलाने का विकल्प चुनना पड़ता है.					
8. मेरे शरीर की छवि के बारे में चिंताएं मुझे बोतल से दूध पिलाने के लिए प्रोत्साहित करती हैं.					

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9. विशेष रूप से रात में बोतल से दूध पिलाने का विकल्प चुना, जिससे मेरी रात की नींद खराब न हो.					
10. माँ की अनुपलब्धता कुछ स्थितियों में बच्चे को बोतल से दूध पिलाने के विकल्प को चुनने के निर्णय को प्रभावित करती है.					
11. मेरे परिवार के सदस्यों / रिश्तेदारों / पड़ोसियों / दोस्तों ने मेरे शिशु को बोतल से दूध पिलाने के मेरे निर्णय को लेने में भूमिका निभाई.					
12. शिशु को बोतल से दूध पिलाने का मेरा निर्णय मेरी अगली गर्भावस्था या गर्भवती होने की इच्छा से प्रभावित था.					
13. काम से संबंधित थकान के कारण स्तनपान के प्रति मेरी प्रतिबद्धता प्रभावित होती है.					
14. मुझे शिशु को स्तनपान कराने में अनुभव की कमी है जो मुझे बोतल के लिए प्रोत्साहित करता है.					
15. मेरे पास बच्चे को पिलाने के लिए पर्याप्त स्तन दूध नहीं था जिसके कारण मैंने बोतल से दूध पिलाने का विकल्प चुना.					
16. यात्रा के दौरान बोतल से दूध पिलाने की आसानी और सार्वजनिक स्थानों पर गोपनीयता की कमी मेरे दूध पिलाने के विकल्पों को प्रभावित करती है.					

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17. मेरा शिशु समय से पहले पैदा हुआ था या बीमारी के साथ पैदा हुआ था जिसने मेरी बोतल से पिलाने कि पसंद को प्रभावित किया.					
18. तनाव और भावनात्मक चुनौतियां बोतल से दूध पिलाने की मेरी पसंद में योगदान करती हैं.					
19. काम पर या सार्वजनिक स्थानों पर अपने शिशु को स्तनपान कराने में मुझे लोगों के बीच शर्मिंदगी महसूस होती है, जिससे मेरी स्तनपान कराने की पसंद प्रभावित होती है.					
20. मधुमेह या मातृ संक्रमण जैसी पुरानी स्वास्थ्य स्थिति बोतल से दूध पिलाने के मेरे निर्णय में योगदान करती है.					
21. परिवार से समर्थन की कमी मेरे भोजन विकल्पों को प्रभावित करती है, जिससे मुझे बोतल से दूध पिलाना पड़ता है.					
22. आत्मनिर्णय की कमी मेरे भोजन की पसंद को प्रभावित करती है, यही वजह है कि मैं बोतल से दूध पिलाती हूँ.					

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ANNEXURE 4

LIST OF EXPERTS FOR CONTENT VALIDITY OF THE TOOL

S. No.	Name of the Expert	Department & Designation
Validators from AIIMS, Bhopal		
1.	Dr. Priya Gogia	Associate Professor, Department of Paediatric Medicine, AIIMS, Bhopal
2.	Dr. Yogendra K Singh	Associate Professor, Department of Paediatric Medicine, AIIMS, Bhopal
3.	Dr. Amber Kumar	Associate Professor, Department of Paediatric Medicine, AIIMS, Bhopal
External Validators		
4.	Parul Datta	Ex-Principal Nursing Officer, Independent Nursing Professional, Neonatal Nursing Faculty, West Bengal
5.	Dr. Malar Kodi S	Assistant Professor, Paediatric Nursing, AIIMS, Rishikesh
6.	Dr. Ramya Shanmugam	Assistant Professor, Paediatric Nursing, AIIMS, Patna
7.	Dr. Hansmukh Jain	Assistant Professor, Paediatric Nursing, AIIMS, Patna
8.	Mrs. Hepsi Bai Joseph	Assistant Professor, Paediatric Nursing, AIIMS, Bhubaneswar
9.	Mrs. Aisha Akhter	Assistant Professor, Paediatric Nursing, MMINSR, Soura, Kashmir

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ANNEXURE 5

LETTER REQUESTING EXPERTS' OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF TOOL

Ref No. /2355
Date 16/3/24

LETTER REQUESTING EXPERTS' OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF RESEARCH TOOL

Date: 30/3/24

From:

Huzaifa Akram,

M.Sc. Nursing Student(Batch 2023-25),

Nursing college, AIIMS Bhopal.

To,

.....

.....

.....

Subject: Request for Experts' Opinion and Suggestions for Content Validity of Research Tool

Respected Sir/ Madam,

I, Huzaifa Akram , am a student of M.Sc. Nursing (Batch 2023-25) course, from the specialty of Paediatric Nursing, at Nursing College, AIIMS Bhopal. I have selected the below mentioned topic for my dissertation, which is to be submitted as partial fulfilment of my Master's degree in Nursing.

Title of the study: "A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh".

For this study, I have prepared a self-structured data collection tool with following sections:

Section-A: To assess the sociodemographic variables of mother.
Section-B: To assess the clinical variables of mother, and infant characteristics.
Section-C: To assess various practices of bottle feeding.
Section-D: To assess various physical, psychosociocultural, occupational, convenience, marketing, personal and situational determinants of bottle feeding.

I request you to kindly review the content of the research tool and provide your valuable feedback, and suggestions for any modifications. I also plea you to accept the request and sign the enclosed certificate of validation.

Thanking you in anticipation.

Sincerely,
Huzaifa Akram,
MSc Nursing (Batch 2023-25)

Guide:
Dr. Mamta Verma,
Associate Professor,
Nursing College,
AIIMS Bhopal.

Co-guide:
Mr. R Velmurugan,
Assistant Professor,
Nursing College,
AIIMS Bhopal.

Co-guide:
Dr. Abhijit Pakhre,
Professor,
Department of CFM,
AIIMS Bhopal.

23/3/2024

Dr. Mamta Verma,
Associate Professor
& I/C Principal,
Nursing College,
AIIMS Bhopal.

Enclosed with: Letter of permission, Brief synopsis, Research tool, Criteria checklist for content validity of the tool , Certificate of validation.

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ANNEXURE 6

CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

Dear Expert,

This study uses a self-structured tool (questionnaire) to assess the bottle-feeding practices and its associated determinants among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh. The tool consists of the following sections:

a) **Section-A:** To assess the sociodemographic variables of mother.
b) **Section-B:** To assess the clinical variables of mother and infant characteristics.
c) **Section-C:** To assess various practices of bottle feeding among the mothers.
d) **Section-D:** To assess various physical, psychosociocultural, occupational, convenience, marketing, personal, and situational determinants of bottle feeding.

We kindly request your expert judgment on the degree of relevance of each item. If there are any suggestions or modifications, please mention them in the remark column.

Your expertise and cooperation will be highly appreciated.

Section-A: Sociodemographic variables of mother.

It consists of six items to assess the sociodemographic variables of mother.

Item No.	Highly relevant (4)	Quite relevant (3)	Somewhat relevant (2)	Not relevant (1)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					

Section-B: Clinical variables of mother and infant characteristics.

This section consists of six items related to clinical variables of mother and two items related to characteristics of infant.

Item No	Highly relevant (4)	Quite relevant (3)	Somewhat relevant (2)	Not relevant (1)	Remarks

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1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

Section-C: To assess various practices of bottle feeding among the mothers.

It consists of seven items addressing various bottle-feeding practices among mothers.

Item No	Highly relevant (4)	Quite relevant (3)	Somewhat relevant (2)	Not relevant (1)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Section-D: Determinants of bottle feeding

It comprises of 22 items that focus on determinants of bottle feeding. the determinants are divided into domains including: Physical (Item 2, 17, and 20), Psychosociocultural (Item 3, 11, 18, 19, and 21), Occupational (Item 4 and 13), Convenience (Item 1 and 5), Marketing (Item 6), Personal (Item 7, 8, 12, 14, 15, and 22) and Situational (Item 9, 10, and 16) determinants of bottle feeding.

Participants' responses will be assessed by using a five-point Likert scale with a range from 1 to 5, where 1 represents "Disagree", 2 represents "Somewhat disagree", 3 represents "Neither agree nor disagree", 4 represents "Somewhat agree" and 5 represents "Agree".

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Item No	Highly relevant (4)	Quite relevant (3)	Somewhat relevant (2)	Not relevant (1)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
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17.					
18.					
19.					
20.					
21.					
22.					

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ANNEXURE 7
FORMAT OF CONTENT VALIDATION CERTIFICATE

CERTIFICATION OF VALIDATION

This is to certify that the questionnaire/tool constructed by Huzaifa Akram, an M.Sc. Nursing student (Batch 2023-25) at Nursing College, AIIMS, Bhopal, for her study titled **"A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh"**, has been validated by me and is found to be valid.

Overall Remarks :

Signature:

Name of the Expert:

Designation:

Name of the Institution:

Official Seal:

Date:

Place:

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ANNEXURE 8
CERTIFICATE OF TRANSLATION (HINDI)

Certificate of Translation

To Whom it May Concern

This is to certify that Ms Huzaifa Akram a student of MSc nursing from the speciality of Paediatric Nursing at Nursing College, AIIMS Bhopal is conducting research on topic "**A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh**". The Hindi version of research tool, participant information sheet, and participant informed consent form for this study is a true and accurate translation of the English version and is valid to collect the data for research.

Seal & Signature: ..... 15/06/2024.

Name of the language expert: आनंदकृष्ण
राजभाषा अधिकारी
कार्या.-मुख्य महाप्रबंधक
मध्यप्रदेश दूरसंचार परिमंडल
भोपाल (म.प्र.) पिन-462015

Designation: .....

Qualification: M.A. (Hindi) M.A. (Translation Studies)

Date: 15/06/2024.

Place: Bhopal

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ANNEXURE 9
CERTIFICATE OF TRANSLATION (ENGLISH)

Certificate of Back Translation (Hindi to English)

To Whom it May Concern

This is to certify that Ms Huzaifa Akram, a student of MSc nursing from the speciality of Paediatric Nursing at Nursing College, AIIMS Bhopal is conducting research on topic "**A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh**". The English version of research tool, participant information sheet, and participant informed consent form for this study is a true and accurate translation of the Hindi version and is valid to collect the data for research.

Seal & Signature: ..... 13/07/2024 .....

Name of the language expert: ..... Jyoti Thakur .....

Designation: ..... Faculty in English .....

Qualification: ..... Ph.D .....

Date: ..... 13/07/2024 .....

Place: ..... Bhopal .....

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ANNEXURE 10

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

AIIMS, BHOPAL (M.P.)-462020
Received No. 12698
Date 27/5/24

From,
Huzaifa Akram,
MSc Paediatric Nursing Student (2023-2025 batch),
Nursing College, AIIMS Bhopal.

To,
The Medical Officer,
Urban Primary Health Center,
Barkhera Pathani,
Bhopal.

(Through Proper Channel)

Subject: Letter seeking permission for conducting research study in community area under UPHC, Barkhera Pathani, Bhopal.

Respected Sir/Ma'am,

As a part of the curriculum, I Huzaifa Akram, MSc Paediatric Nursing student at AIIMS Bhopal, am conducting a research study titled **"A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh"**.

The study is approved by the IHEC-SR of AIIMS Bhopal, and LOP has been received for the same (Enclosed).

I seek your permission for the data collection for research study (Pilot study and main study) from nearby areas under Urban Primary Health Center, Barkhera Pathani.

Kindly grant permission for the same. I shall be highly obliged to you.

Submitted for your kind perusal.

Thanking you

Huzaifa Akram (Student Investigator)
(+91-9149925512)**huzaifaa.mscnursing23@aiimsbhopal.edu.in**

Guide:
Dr. Mamta Verma.
Associate Professor
27/5/2024

Co-Guide:
Mr. R Velmurugan.
Assistant Professor
27/5/24

Co-Guide:
Dr. Abhijit Pakhre.
Professor

Dr. Mamta Verma
Associate Professor
I/C Principal
27/5/2024.

Enclosure:
1. Research Proposal
2. LOP from IHEC-SR, AIIMS, Bhopal.

Permitted
9/9/24.

ANNEXURE 11
PARTICIPANT INFORMATION SHEET (ENGLISH)

Participant Information Sheet

1. **Study Title:**

   "A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh"

2. **Study Investigators:**

   Student: Huzaifa Akram, M.Sc. Nursing (Paediatric Nursing), AIIMS, Bhopal.

   Guide: Dr. Mamta Verma, Paediatric Nursing, Associate Professor, Nursing College, AIIMS, Bhopal.

   Co-Guides: 1) Mr. R Velmurugan, Assistant Professor, Nursing College, AIIMS, Bhopal.
   2) Dr. Abhijit Pakhre, Professor, CFM Department, AIIMS, Bhopal.

3. **Introduction**:

   We are conducting a research study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh. We kindly request you to give your consent so that we can complete our study. Your voluntary agreement is appreciated and if you choose to participate, we will provide a consent form for your signature.

4. **Purpose of the study:**

   The purpose of this study is to identify the determinants of bottle feeding among the mothers of children less than 12 months of age and identify the factors that impact these mothers' feeding choices for their infants.

5. **Taking part – what it involves:**

a. **Do I have to take part?**

   Participation in this research is completely voluntary. Choosing not to participate or withdrawing at any point will have no impact on any of your rights.

b. **What is expected of me if I take part?**

   Upon agreeing to participate in the study, following informed consent, you will be asked questions about your personal data and bottle-feeding practices, including your reasons for choosing bottle feeding. This information will be kept confidential and not disclosed to anyone.

c. **How long will my part in the study last?**

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Your participation in the study would last for 20-30 minutes. For this, you don't have to participate repeatedly.

d. Do I have to come for extra visits or undergo extra investigations for the study?

No additional visits or extra investigations will be done for this study.

e. What are the possible benefits in taking part?

Participating in the study on bottle feeding determinants could provide valuable insights for mothers, such as understanding factors influencing their feeding choices, gaining access to relevant information, and contributing to research that may lead to improved support for mothers and infants.

f. What are the possible disadvantages and risks of taking part?

Though this study does not foresee any particular risks or adverse effects, it is essential to acknowledge the potential for a loss of privacy and confidentiality concerning the collected information, despite implementing all the measures to ensure secure data storage and access.

g. What happens to the information collected from me?

All information collected will be kept strictly confidential and not shared with anyone. Results from the study will be reported as group data and will not reveal your identity in any way.

h. What if I change my mind regarding participation in the study?

You are entitled to change your mind and withdraw at any time during the study without any disadvantages or penalty.

i. Whom do I contact for more information or if I have further questions or concerns?

If you want any information or have questions or concerns, you can contact the following:

Ms. Huzaifa Akram
Post graduate student
Department of Paediatrics,
AIIMS Bhopal
9149925512,
e-Mail: HUZAIFAA.mscnursing23@aiimsbhopal.edu.in

Dr. Ankur Joshi
Member Secretary
IHEC – Student Research,
AIIMS Bhopal
8818899050,
ihecpgr@aiimsbhopal.edu.in

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ANNEXURE 12
PARTICIPANT INFORMATION SHEET (HINDI)

प्रतिभागी सूचना पत्रक

1. **अध्ययन का शीर्षक:**
"भोपाल, मध्य प्रदेश के एक चयनित क्षेत्र में 12 महीने से कम उम्र के बच्चों की माताओं के बीच बोतल से दूध पिलाने के निर्धारकों की जांच करने के लिए एक वर्णनात्मक अध्ययन"।

2. **अध्ययन जांचकर्ता:**
छात्र: हुजैफा अकरम, पीडियाट्रिक नर्सिंग, एमएससी नर्सिंग-प्रथम वर्ष, एम्स भोपाल।
गाइड: डॉ ममता वर्मा, पीडियाट्रिक नर्सिंग, एसोसिएट प्रोफेसर, नर्सिंग कॉलेज, एम्स भोपाल।
सह-मार्गदर्शिकाएँ : 1) श्री आर वेलमुरुगन, सहायक प्रोफेसर, नर्सिंग कॉलेज, एम्स भोपाल।
2) डॉ अभिजीत पाखरे, प्रोफेसर, सीएफएम विभाग, एम्स भोपाल।

3. **परिचय**:
हम भोपाल, मध्य प्रदेश के एक चयनित क्षेत्र में 12 महीने से कम उम्र के बच्चों की माताओं के बीच बोतल से दूध पिलाने के निर्धारकों की जांच करने के लिए एक शोध अध्ययन कर रहे हैं। हम आपसे अनुरोध करते हैं कि आप अपनी सहमति दें ताकि हम अपना अध्ययन पूरा कर सकें। आपके स्वैच्छिक समझौते की सराहना की जाती है, और यदि आप भाग लेना चुनते हैं, तो हम आपके हस्ताक्षर के लिए एक सहमति फॉर्म प्रदान करेंगे।

4. **अध्ययन का उद्देश्य:**
इस अध्ययन का उद्देश्य 12 महीने से कम उम्र के बच्चों की माताओं के बीच बोतल से दूध पिलाने के निर्धारकों की पहचान करना और उन कारकों की पहचान करना है जो इन माताओं के अपने शिशुओं के लिए भोजन विकल्पों को प्रभावित करते हैं।

5. **भाग लेना - इसमें क्या शामिल है:**

a. **क्या मुझे भाग लेना चाहिए?**
इस शोध में भागीदारी पूरी तरह से स्वैच्छिक है। किसी भी बिंदु पर भाग लेने या वापस लेने का विकल्प चुनने से आपके किसी भी अधिकार पर कोई प्रभाव नहीं पड़ेगा।

b. **अगर मैं भाग लेता हूं तो मुझसे क्या उम्मीद की जाती है?**
अध्ययन में भाग लेने के लिए सहमत होने पर, सूचित सहमति के बाद, आपसे आपके व्यक्तिगत डेटा और बोतल से पिलाने की प्रथाओं के बारे में प्रश्न पूछे जाएंगे, जिसमें बोतल से दूध पिलाने का चयन करने के आपके कारण भी शामिल हैं। यह जानकारी गोपनीय रखी जाएगी और किसी को नहीं बताई जाएगी।

c. **अध्ययन में मेरा हिस्सा कब तक चलेगा?**
अध्ययन में आपकी भागीदारी 20-30 मिनट तक चलेगी। इसके लिए आपको बार-बार भाग लेने की जरूरत नहीं है।

d. **क्या मुझे अतिरिक्त यात्राओं के लिए आना होगा या अध्ययन के लिए अतिरिक्त जांच से गुजरना होगा?**

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इस अध्ययन के लिए कोई अतिरिक्त दौरा या अतिरिक्त जांच नहीं की जाएगी।

e. **भाग लेने में संभावित लाभ क्या हैं?**
बोतल से दूध पिलाने के निर्धारकों पर अध्ययन में भाग लेना माताओं के लिए मूल्यवान अंतर्दृष्टि प्रदान कर सकता है, जैसे कि उनके भोजन विकल्पों को प्रभावित करने वाले कारकों को समझना, प्रासंगिक जानकारी तक पहुंच प्राप्त करना और अनुसंधान में योगदान करना जिससे माताओं और शिशुओं के लिए बेहतर समर्थन हो सकता है।

f. **भाग लेने के संभावित नुकसान और जोखिम क्या हैं?**
हालांकि यह अध्ययन किसी विशेष जोखिम या प्रतिकूल प्रभाव की भविष्यवाणी नहीं करता है, लेकिन यह आवश्यक है सुरक्षित डेटा भंडारण और पहुंच सुनिश्चित करने के लिए सभी उपायों को लागू करने के बावजूद, एकत्रित जानकारी से संबंधित गोपनीयता और गोपनीयता के नुकसान की संभावना को स्वीकार करें।

g. **मुझसे एकत्र की गई जानकारी का क्या होता है?**
एकत्र की गई सभी जानकारी को पूरी तरह से गोपनीय रखा जाएगा और किसी के साथ साझा नहीं किया जाएगा। अध्ययन के परिणामों को समूह डेटा के रूप में रिपोर्ट किया जाएगा और किसी भी तरह से आपकी पहचान प्रकट नहीं होगी।

h. **क्या होगा अगर मैं अध्ययन में भाग लेने के बारे में अपना मन बदलता हूं?**
आप बिना किसी नुकसान या दंड के अध्ययन के दौरान किसी भी समय अपना मन बदलने और वापस लेने के हकदार हैं।

i. **अधिक जानकारी के लिए मैं किससे संपर्क करूं या यदि मेरे पास और प्रश्न या चिंताएं हैं?**
यदि आप कोई जानकारी चाहते हैं या आपके प्रश्न या चिंताएं हैं, तो आप निम्नलिखित से संपर्क कर सकते हैं:

	हुजैफा अकरम	**डॉ अंकुर जोशी**
	स्नातकोत्तर छात्र	सदस्य सचिव
	बाल रोग विभाग,	संस्थान आचार समिति - छात्र अनुसंधान,
	एम्स भोपाल।	एम्स भोपाल।
	9149925512,	8818899050,
ई-मेल:	HUZAIFAA.mscnursing23@aiimsbhopal.edu.in	ihecpgr@aiimsbhopal.edu.in

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ANNEXURE 13
INFORMED CONSENT FORM (ENGLISH)

Participant Informed Consent Form

Participant identification number for this study:

Title of the study:- "A descriptive study to examine the determinants of bottle feeding among the mothers of children less than 12 months of age in a selected area of Bhopal, Madhya Pradesh".

Name of the Principal Investigator: Ms. Huzaifa Akram

Mobile No.:- 9149925512

The content of the information sheet dated ----------, have been read carefully by me or explained in detail to me, in a language I comprehend and I have fully understood the content. I confirm that I have had the opportunity to ask questions.

The nature, purpose, potential risks/benefits and expected duration of the study, and other relevant details have been explained to me in detail. I acknowledge that my participation in this study is voluntary and that I retain the right to withdraw at any time without providing a reason. I understand that withdrawing will not impact any of my legal rights and there will be no compensation for injury, if any, caused due to participation in this study.

With this understanding, I willingly consent to take part in this study.

Date:

Place:

Name of the participant:

(Signature/left thumb impression)

Spouse of:

Complete postal address:

This is to certify that the above consent has been obtained in my presence.

Signature of the Investigator: Date: Place:

Witness 1:	Witness 2:
Signature:	signature:

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ANNEXURE 14
INFORMED CONSENT FORM (HINDI)

प्रतिभागी सूचित सहमति फॉर्म

इस अध्ययन के लिए प्रतिभागी पहचान संख्या:

अध्ययन का शीर्षक: "भोपाल, मध्य प्रदेश के एक चयनित क्षेत्र में 12 महीने से कम उम्र के बच्चों की माताओं के बीच बोतल से दूध पिलाने के निर्धारकों की जांच करने के लिए एक वर्णनात्मक अध्ययन"।

प्रधान अन्वेषक का नाम: सुश्री हुजैफा अकरम

मोबाइल नंबर:- 9149925512

----------, दिनांकित सूचना पत्र की सामग्री को मेरे द्वारा ध्यान से पढ़ा गया है या मुझे विस्तार से समझाया गया है, एक ऐसी भाषा में जिसे मैं समझता हूं, और मैंने सामग्री को पूरी तरह से समझ लिया है। मैं पुष्टि करता हूं कि मुझे सवाल पूछने का अवसर मिला है।

अध्ययन की प्रकृति, उद्देश्य, संभावित जोखिम / लाभ और अपेक्षित अवधि, और अन्य प्रासंगिक विवरण मुझे विस्तार से समझाया गया है। मैं स्वीकार करता हूं कि इस अध्ययन में मेरी भागीदारी स्वैच्छिक है, और मैं बिना कोई कारण बताए किसी भी समय वापस लेने का अधिकार रखता हूं। मैं समझता हूं कि वापस लेने से मेरे किसी भी कानूनी अधिकार पर असर नहीं पड़ेगा, और इस अध्ययन में भाग लेने के कारण होने वाली चोट, यदि कोई हो, के लिए कोई मुआवजा नहीं होगा।

इस समझ के साथ, मैं स्वेच्छा से इस अध्ययन में भाग लेने के लिए सहमति देता हूं।

तारीख:

स्थान:

प्रतिभागी का नाम:

(हस्ताक्षर/बाएं अंगूठे का निशान)

के पत्नी:

पूरा डाक पता:

यह प्रमाणित करना है कि उपरोक्त सहमति मेरी उपस्थिति में प्राप्त की गई है।

अन्वेषक के हस्ताक्षर: तारीख: स्थान:

गवाह 1: गवाह 2:

दस्तख़त: दस्तख़त:

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ANNEXURE 15
MASTER DATA SHEET

There were a total of 241 participants, coded as **P1, P2, P3, P4, … P241.**

I. **Section-A:** Sociodemographic variables of mother.

Sociodemographic Variable	Code	Category	Code
1. Age in years:	SD1	a) Less than 21	1
		b) 21-30	2
		c) 31-40	3
		d) More than 40	4
2. Marital status:	SD2	a) Married	1
		b) Divorced	2
		c) Widowed	3
3. Type of family:	SD3	a) Nuclear	1
		b) Joint	2
		c) Extended	3
		d) Other	4
4. Occupation of mother:	SD4	a) Homemaker	1
		b) Government employee	2
		c) Private sector employee	3
		d) Self-employed	4
		e) Other	5
5. Education status of mother:	SD5	a) No formal education	1
		b) Primary education (Up to 5th standard)	2
		c) Secondary or higher secondary education (Up to 12th standard)	3
		d) Higher education	4
6. Socio-economic class of the family based on modified Kuppuswamy Socioeconomic Scale-2023:	SD6	a) Upper (I)	1
		b) Upper middle (II)	2
		c) Lower middle (III)	3
		d) Upper lower (IV)	4
		e) Lower (V)	5

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II. **Section-B:** Clinical variables of mother and infant characteristics.

Clinical Variables and Infant Characteristics	Code	Category	Code
1. Gravida:	CV1	a) Primigravida	1
		b) Multigravida	2
		c) Grand multigravida	3
2. Number of living children:	CV2	a) 1	1
		b) 2	2
		c) 3	3
		d) More than 3	4
3. Average spacing between two most recent pregnancies or births:	CV3	a) Less than 2 years	1
		b) >2 and ≤3 years	2
		c) >3 years	3
		d) Not applicable (Primigravida)	4
4. Age of the infant in completed months:	CV4	a) 0 to 3	1
		b) 4 to 6	2
		c) 7 to 9	3
		d) 10 to <12	4
5. Gender of the infant:	CV5	a) Male	1
		b) Female	2
		c) Other	3
6. Counselling about breast feeding received:	CV6	a) Yes, received in antenatal period only	1
		b) Yes, received in postnatal period only	2
		c) Yes, received in both antenatal and postnatal period	3
		d) No, did not receive at all	4
7. Place of delivery:	CV7	a) Home	1
		b) SC/PHC/CHC	2
		c) Hospital	3
		d) Other: Please specify	4
8. Mode of delivery:	CV8	a) Normal vaginal delivery	1
		b) Caesarean-section	2
		c) Assisted vaginal delivery	3

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Section C (Bottle feeding practices): It includes various practices of bottle feeding among the mothers of children less than 12 months of age.

Sociodemographic variable of mother	Code	Category	Code
1. Type of feeding practised for the infant currently:	BFP1	a) Bottle feeding only	1
		b) Bottle feeding along with breastfeeding	2
		c) Bottle feeding along with breastfeeding and other foods	3
		d) Bottle feeding and other foods without breastfeeding	4
2. Time of initiation of bottle feeding:	BFP2	a) Immediately after birth	1
		b) Before 6 months of age (but not immediately after birth)	2
		c) After 6 months of age	3
3. Duration of bottle feeding:	BFP3	a) 0 to 3 months	1
		b) 4 to 6 months	2
		c) 7 to 9 months	3
		d) 10 to <12 months	4
4. Frequency of bottle feeding per day:	BFP4	a) 1-2 times	1
		b) 3-4 times	2
		c) 5-6 times	3
		d) More than 6 times	4
5. Type of feed given with bottle:	BFP5	a) Breast milk	1
		b) Cow milk or Packet milk	2
		c) Formula feed	3
		d) Mixed feed	4
6. Frequency of bottle cleaning:	BFP6	a) After every feeding	1
		b) Only in the morning and the evening	2
		c) Only when spoiled	3
		d) Only once a day	4
7. Techniques used to clean the bottle:	BFP7	a) Boiling	1
		b) Rising with soap and water	2
		c) Only rinsing with water	3
		d) Rinsing followed by boiling	4

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II. **Section D:** Determinants of bottle feeding

Statement/Determinant	Response				
	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree
The easy availability of cow milk, packet milk, or formula feed impacts my decision of bottle feeding the infant.					
Opting for bottle feeding became my preferred choice when I faced breast-related challenges like abscess, mastitis, sore nipples, or inverted nipples.					
Cultural beliefs favouring bottle-feeding exist in my community that affect my feeding choices.					
Lack of breastfeeding-friendly facilities like privacy, flexible work schedule at my workplace, etc. affect my feeding choices making me opt for bottle feeding.					
The ease of allowing anyone to feed with a bottle contributes to my choice of feeding method.					
The positive portrayal by mass media made me embrace bottle feeding for its advantages and convenience.					
Lack of knowledge and confidence makes me					

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hesitant in breastfeeding the infant, making me choose bottle feeding instead.					
Concerns about my body image influence my choice of feeding method leading me to bottle feeding.					
My decision to opt for bottle feeding, specifically at night, is to prevent sleep disturbances.					
The unavailability of the mother impacts the decision to opt for bottle-feeding the baby in certain situations.					
My family members/relatives/neighbours/friends played a role in shaping my decision to use bottle feeding for my infant.					
My decision to bottle feed the infant was influenced by my next pregnancy or the desire to become pregnant.					
Work-related demands cause fatigue that impacts my commitment to breastfeeding.					
I lack experience in breastfeeding the infant that makes me go for bottle feeding.					
I was not having enough breast milk to feed the baby that made me opt for bottle feeding.					

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Ease and convenience of bottle-feeding during traveling impacts my feeding choices.					
My infant was born preterm or born with medical condition that influenced my feeding choice.					
Stress and emotional challenges contribute to my choice of bottle feeding.					
I feel embarrassed among people at work or in public places to breastfeed my infant, which affects my feeding choices.					
Chronic health condition like diabetes mellitus, or maternal infection contribute to my decision to bottle feed.					
Lack of support from the family impacts my feeding choices, leading me to choose bottle feeding.					
Lack of self-determination influences my choice of feeding, which is why I go for bottle feeding.					

The statements/determinants were coded as **D1, D2, D3, … D22** and the responses were coded as:

Response	Code
Disagree	1
Somewhat Disagree	2

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Neither Agree nor Disagree	3
Somewhat Agree	4
Agree	5

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Data Sheet of Sociodemographic Variables of Mothers

Code	SD1	SD2	SD3	SD4	SD5	SD6
P1	2	1	1	1	2	4
P2	2	1	1	1	4	4
P3	2	1	1	1	1	3
P4	2	1	1	1	1	4
P5	2	1	1	1	1	4
P6	2	1	1	1	2	4
P7	2	1	1	1	1	3
P8	2	1	1	4	4	4
P9	2	1	1	3	4	3
P10	2	1	1	1	1	4
P11	3	1	1	1	1	3
P12	2	1	1	1	1	4
P13	2	1	1	1	2	3
P14	3	1	1	1	1	4
P15	2	1	1	2	3	3
P16	2	1	1	1	2	4
P17	3	1	1	1	1	4
P18	2	1	2	1	2	4
P19	2	1	2	4	3	3
P20	1	1	1	3	3	2
P21	2	1	1	4	3	3
P22	2	1	1	3	4	3
P23	3	1	2	1	1	4
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P27	3	1	2	3	2	4
P28	2	1	2	1	3	3
P29	3	3	2	1	2	3
P30	3	1	1	3	4	3
P31	2	1	2	1	3	2
P32	2	1	2	1	1	3
P33	2	1	1	1	1	4
P34	3	1	1	4	1	2
P35	1	1	1	1	3	4
P36	2	1	1	1	1	4
P37	1	1	1	4	2	3
P38	2	1	2	1	4	3
P39	1	1	2	1	1	3
P40	2	1	1	3	3	2

Scanned with OKEN Scanner

P41	1	1	1	1	2	3
P42	3	1	2	1	1	4
P43	2	1	1	1	4	3
P44	2	1	2	1	1	4
P45	2	1	1	3	3	2
P46	2	1	1	1	2	5
P47	2	1	1	1	1	4
P48	2	1	2	1	1	4
P49	2	1	1	1	1	2
P50	2	1	1	3	4	3
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P54	2	1	1	1	1	4
P55	3	1	1	1	2	3
P56	1	1	2	3	3	4
P57	2	1	1	1	1	3
P58	2	1	1	1	4	3
P59	2	1	2	3	4	3
P60	3	1	1	1	1	4
P61	2	1	1	1	4	3
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P65	2	1	1	1	2	3
P66	2	1	1	1	4	3
P67	1	1	1	1	2	2
P68	2	1	1	1	3	3
P69	2	1	1	1	2	2
P70	3	1	1	1	1	3
P71	2	1	2	1	1	4
P72	2	1	2	2	4	2
P73	2	1	1	3	3	2
P74	3	1	1	1	2	3
P75	1	1	1	5	1	4
P76	3	1	1	1	2	4
P77	2	1	1	1	1	3
P78	2	1	1	2	3	2
P79	2	1	2	1	1	2
P80	2	1	2	3	4	3
P81	3	1	1	1	1	4
P82	1	1	1	1	1	4
P83	2	1	1	1	1	4

Scanned with OKEN Scanner

P84	1	1	2	1	1	4
P85	1	1	2	3	4	2
P86	2	1	1	3	3	4
P87	2	1	2	1	3	2
P88	2	1	1	1	1	2
P89	2	1	1	1	2	3
P90	1	1	2	2	3	4
P91	2	1	1	2	4	2
P92	2	1	1	1	1	5
P93	1	1	1	1	3	3
P94	2	1	1	3	4	3
P95	2	1	1	2	2	2
P96	1	1	1	1	1	5
P97	2	1	2	1	2	2
P98	2	1	1	1	1	4
P99	3	1	1	1	1	4
P100	2	1	1	1	1	5
P101	2	1	1	3	3	4
P102	2	1	1	2	4	2
P103	1	1	1	1	1	4
P104	2	1	1	1	1	5
P105	2	1	2	1	2	4
P106	2	1	1	1	1	3
P107	2	1	1	3	4	2
P108	1	1	1	1	1	3
P109	2	1	1	1	3	3
P110	2	1	1	3	2	3
P111	2	1	1	1	1	4
P112	1	1	1	1	4	3
P113	2	1	1	2	4	3
P114	2	1	1	1	2	3
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P119	2	1	2	1	3	3
P120	1	1	1	1	1	2
P121	2	1	1	1	2	4
P122	2	1	1	2	3	3
P123	2	1	1	2	4	2
P124	2	1	2	1	1	4
P125	2	1	2	1	3	4
P126	2	1	1	3	4	3

Scanned with OKEN Scanner

P127	1	1	2	2	2	3
P128	2	1	2	1	1	5
P129	2	1	1	1	2	2
P130	2	1	2	1	1	5
P131	3	1	1	1	1	4
P132	2	1	2	1	1	4
P133	1	1	1	3	3	3
P134	2	1	1	2	4	2
P135	3	1	1	1	1	3
P136	2	1	1	1	1	3
P137	2	1	2	1	1	4
P138	2	1	1	1	1	4
P139	2	1	1	3	4	3
P140	2	1	1	3	3	4
P141	2	1	1	1	3	2
P142	2	1	2	3	2	4
P143	2	1	2	1	2	4
P144	2	1	1	3	3	4
P145	3	1	1	1	1	4
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P149	2	1	1	1	2	4
P150	2	1	1	1	1	3
P151	2	1	2	3	4	2
P152	2	1	2	1	1	3
P153	2	1	2	1	3	3
P154	2	1	1	3	2	4
P155	2	1	2	1	1	5
P156	1	1	2	1	4	3
P157	2	1	2	2	4	2
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P163	2	1	1	2	4	3
P164	2	1	1	3	3	2
P165	3	1	1	1	2	4
P166	1	1	1	5	1	3
P167	3	1	2	1	2	5
P168	2	1	2	1	1	2
P169	2	1	1	2	3	4

Scanned with OKEN Scanner

P170	2	1	1	1	1	3
P171	1	1	1	3	4	4
P172	2	1	2	1	2	5
P173	2	1	2	1	1	4
P174	2	1	1	1	1	4
P175	2	1	1	1	1	3
P176	2	1	1	3	4	3
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P187	2	1	2	1	4	3
P188	1	1	1	1	3	4
P189	3	1	1	2	3	2
P190	2	1	1	1	1	3
P191	1	1	1	1	1	4
P192	3	1	1	4	1	2
P193	2	1	1	1	3	3
P194	2	1	1	1	1	5
P195	1	1	1	4	2	3
P196	2	1	2	1	4	4
P197	2	1	2	1	1	3
P198	2	1	1	3	3	2
P199	1	1	1	1	2	4
P200	3	1	2	1	1	5
P201	2	1	1	1	4	3
P202	2	1	1	1	2	3
P203	2	1	1	1	3	4
P204	1	1	1	1	2	2
P205	3	1	1	1	1	4
P206	2	1	1	1	2	4
P207	1	1	1	1	4	2
P208	2	1	1	1	1	5
P209	3	1	1	1	1	4
P210	2	1	1	1	1	5
P211	1	1	2	1	2	4
P212	2	1	1	1	1	4

Scanned with OKEN Scanner

P213	3	1	1	1	1	4
P214	2	1	1	3	3	3
P215	2	1	3	3	4	3
P216	4	1	1	1	1	4
P217	2	1	1	1	2	4
P218	2	1	2	1	2	3
P219	2	1	2	1	1	5
P220	2	1	1	3	3	3
P221	3	1	2	1	1	3
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P223	2	1	1	1	2	3
P224	1	1	1	1	4	3
P225	2	1	2	1	4	3
P226	3	1	1	3	2	5
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P229	3	1	1	3	4	3
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P233	3	1	1	1	1	4
P234	2	1	2	1	2	4
P235	2	1	1	4	3	3
P236	1	1	1	3	3	3
P237	2	1	1	4	3	4
P238	2	1	2	3	4	3
P239	3	1	1	1	1	3
P240	3	1	1	4	3	4
P241	2	1	2	2	4	3

Scanned with OKEN Scanner

Data Sheet of Clinical Variables of Mothers and Infant Characteristics

Code	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8
P1	2	2	2	4	1	3	3	1
P2	1	1	4	1	2	2	3	1
P3	2	2	3	3	2	2	3	1
P4	1	1	4	1	1	2	3	2
P5	2	3	2	1	1	2	3	1
P6	2	3	2	4	2	2	3	1
P7	1	1	4	4	2	3	3	1
P8	1	1	4	2	1	2	3	1
P9	1	1	4	2	1	2	3	2
P10	2	1	2	4	2	2	3	3
P11	2	3	3	4	2	2	3	2
P12	2	2	2	4	2	2	3	2
P13	1	1	4	2	1	2	3	1
P14	2	3	2	3	2	2	3	2
P15	2	2	2	3	2	2	3	2
P16	1	1	4	1	1	2	3	1
P17	2	3	1	4	1	2	3	2
P18	2	2	1	3	1	4	2	1
P19	1	1	4	2	2	2	2	1
P20	1	1	4	2	1	2	3	2
P21	2	2	1	3	1	2	3	2
P22	1	1	4	4	2	2	3	1
P23	2	3	3	3	2	1	3	2
P24	2	3	3	4	2	4	2	2
P25	1	1	4	1	1	2	3	2
P26	1	1	4	1	2	3	3	1
P27	3	2	2	3	1	3	3	2
P28	1	1	4	2	2	2	3	2
P29	2	3	2	3	1	4	2	1
P30	2	2	3	3	2	2	3	1
P31	1	1	4	4	1	3	2	1
P32	1	1	4	3	2	2	3	1
P33	2	2	1	3	1	2	3	2
P34	3	3	2	4	2	3	3	2
P35	1	1	4	1	2	2	3	1
P36	2	3	2	3	1	2	3	2
P37	1	1	4	4	2	2	3	1
P38	2	2	1	3	1	2	3	1
P39	2	1	1	4	2	3	3	2
P40	2	3	3	2	1	3	3	2
P41	1	1	4	3	2	3	2	1

Scanned with OKEN Scanner

P42	2	2	2	4	1	3	3	2
P43	2	2	1	2	2	2	3	1
P44	2	3	2	3	2	2	3	1
P45	2	2	3	4	2	2	3	1
P46	2	3	1	3	2	2	3	2
P47	2	2	2	2	2	2	3	2
P48	2	1	2	3	1	3	3	3
P49	2	3	1	4	1	2	2	1
P50	1	1	4	4	1	1	3	3
P51	2	1	1	4	2	2	3	2
P52	2	2	2	1	1	2	3	2
P53	1	2	4	3	2	2	3	2
P54	1	2	4	3	1	3	3	2
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P56	1	1	4	2	2	2	3	2
P57	2	3	2	1	1	2	3	3
P58	2	2	3	3	1	4	2	1
P59	2	2	1	4	2	2	3	2
P60	2	2	2	4	2	3	3	2
P61	2	2	1	1	1	2	3	1
P62	1	1	4	3	2	2	2	1
P63	1	1	4	2	2	3	3	1
P64	2	2	1	3	2	2	3	2
P65	2	2	2	1	1	2	3	2
P66	1	1	4	3	1	2	3	1
P67	1	1	4	3	1	2	3	2
P68	2	1	1	3	2	2	3	2
P69	1	1	4	3	2	2	2	1
P70	3	2	2	2	1	3	3	2
P71	2	2	2	3	2	2	3	1
P72	2	3	2	4	1	1	3	3
P73	1	1	4	3	2	3	3	1
P74	2	3	1	3	1	2	2	2
P75	1	1	4	3	1	1	3	3
P76	2	4	2	4	2	1	3	2
P77	2	2	2	3	2	1	3	3
P78	2	2	1	4	1	1	3	3
P79	2	2	3	4	1	3	2	1
P80	2	2	1	2	2	2	3	1
P81	2	3	2	3	2	3	3	2
P82	1	1	4	3	1	2	3	1
P83	2	2	1	3	2	2	3	1
P84	2	1	1	3	2	2	3	2
P85	1	1	4	4	2	3	3	1

Scanned with OKEN Scanner

P86	2	2	2	4	1	3	3	1
P87	2	2	2	3	2	2	3	2
P88	2	2	1	1	1	2	2	1
P89	2	3	1	4	1	2	3	2
P90	1	1	4	4	2	2	3	2
P91	2	2	3	1	2	2	3	3
P92	2	2	2	2	1	1	3	2
P93	1	1	4	3	1	2	2	1
P94	2	2	2	4	2	2	3	1
P95	1	1	4	4	1	4	3	1
P96	1	1	4	2	2	2	3	1
P97	2	3	2	2	2	2	3	2
P98	2	2	2	4	2	2	2	3
P99	3	3	1	1	2	3	3	2
P100	2	2	2	3	1	2	3	1
P101	2	2	2	3	2	4	1	1
P102	2	3	1	3	1	2	3	2
P103	1	1	4	3	2	2	3	1
P104	2	3	1	1	1	2	3	2
P105	2	2	2	3	2	2	2	1
P106	2	1	2	4	2	3	3	2
P107	2	2	2	3	2	2	3	1
P108	1	1	4	4	1	2	3	1
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P110	1	1	4	3	1	2	3	2
P111	2	2	3	4	1	3	3	3
P112	1	1	4	4	2	3	3	3
P113	1	1	4	4	1	2	3	2
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P116	1	1	4	4	1	2	3	2
P117	1	1	4	1	2	2	3	2
P118	2	2	2	3	1	2	3	3
P119	2	2	1	3	1	2	3	2
P120	2	2	2	1	2	2	2	1
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P122	1	1	4	4	1	3	3	2
P123	2	2	3	1	1	2	3	3
P124	2	2	3	2	2	3	3	2
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P126	2	2	2	4	1	2	3	1
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P128	1	1	4	2	1	2	3	1
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Scanned with OKEN Scanner

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P132	2	2	2	3	2	2	3	1
P133	2	2	2	3	1	4	1	1
P134	2	3	1	3	2	2	3	2
P135	2	3	3	3	1	2	3	2
P136	1	1	4	3	2	2	3	1
P137	2	2	2	3	1	2	3	1
P138	2	1	1	3	1	2	3	2
P139	1	1	4	4	1	1	3	1
P140	2	2	1	4	2	1	3	1
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P145	2	2	3	3	2	3	3	3
P146	2	2	2	3	2	3	3	2
P147	1	1	4	3	1	2	3	1
P148	2	3	2	1	2	2	3	2
P149	2	2	2	3	1	2	2	1
P150	2	1	1	4	1	3	3	2
P151	2	2	2	3	1	2	3	1
P152	1	1	4	4	2	3	3	1
P153	2	3	3	3	2	2	3	3
P154	1	1	4	3	2	2	3	2
P155	2	2	2	4	2	3	3	3
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P162	2	2	1	3	1	2	3	1
P163	2	3	1	4	2	1	3	3
P164	1	1	4	3	1	2	3	1
P165	2	3	1	3	2	2	2	2
P166	1	1	4	3	2	2	3	3
P167	2	4	1	4	1	2	3	2
P168	2	2	2	3	1	2	3	3
P169	2	2	2	4	2	2	3	3
P170	2	2	2	4	2	2	2	1
P171	2	2	1	2	1	3	3	1
P172	2	3	2	3	1	1	3	2
P173	2	2	1	2	1	3	3	2

Scanned with OKEN Scanner

P174	2	1	2	3	1	2	3	3
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P176	1	1	4	4	1	3	3	3
P177	2	1	1	4	2	2	3	2
P178	2	2	2	1	2	2	3	2
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P185	2	2	2	4	2	2	3	2
P186	2	2	3	4	2	3	3	2
P187	2	2	1	1	1	2	3	1
P188	1	1	4	3	2	4	2	1
P189	2	3	2	4	2	3	3	2
P190	1	1	4	3	2	4	2	1
P191	1	1	4	2	2	1	3	1
P192	3	4	2	4	1	2	3	2
P193	1	1	4	1	1	2	3	1
P194	2	3	3	3	2	3	3	2
P195	1	1	4	4	1	2	3	1
P196	2	2	1	3	2	2	3	1
P197	2	1	2	4	1	2	3	2
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P199	1	1	4	3	1	2	2	1
P200	2	3	2	4	2	2	3	2
P201	2	2	2	2	1	3	3	1
P202	1	1	4	3	2	2	3	2
P203	2	1	2	3	1	3	3	2
P204	1	1	4	3	1	2	2	1
P205	2	2	1	3	2	3	3	2
P206	2	2	2	1	2	2	3	2
P207	1	1	4	3	2	2	3	1
P208	2	1	3	4	1	3	3	3
P209	2	3	3	4	2	2	3	2
P210	2	2	2	4	1	2	3	2
P211	1	1	4	2	2	2	3	1
P212	1	1	4	4	2	2	2	1
P213	2	3	3	2	2	2	3	2
P214	1	1	4	2	1	2	3	1
P215	1	1	4	3	2	3	3	1
P216	2	3	3	2	2	2	3	2
P217	2	2	1	3	2	3	3	1

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P218	1	1	4	1	1	2	3	2
P219	2	3	3	4	1	2	3	2
P220	1	1	4	2	2	2	3	1
P221	2	3	2	3	2	2	3	2
P222	2	2	2	3	2	3	3	2
P223	2	1	1	1	1	2	3	3
P224	1	1	4	1	2	2	3	2
P225	1	1	4	1	1	2	3	1
P226	2	2	2	3	2	2	3	2
P227	1	1	4	2	1	2	3	2
P228	3	3	1	3	2	4	2	1
P229	2	2	2	3	1	2	3	1
P230	1	1	4	4	2	2	2	1
P231	1	1	4	3	1	3	3	1
P232	2	2	2	3	2	3	3	2
P233	2	2	1	4	2	2	3	3
P234	2	2	1	3	1	4	2	1
P235	1	1	4	2	1	3	2	1
P236	1	1	4	2	2	3	3	2
P237	2	2	2	3	2	2	3	2
P238	2	1	4	4	1	3	3	1
P239	2	2	3	3	1	1	3	2
P240	2	3	2	4	1	4	2	2
P241	2	3	2	3	1	2	3	1

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Data Sheet of Bottle-Feeding Practices

Code	BFP1	BFP2	BFP3	BFP4	BFP5	BFP6	BFP7
P1	3	3	1	2	2	1	1
P2	2	1	1	2	4	1	4
P3	2	3	1	2	2	1	1
P4	2	2	1	2	2	1	4
P5	2	2	1	3	4	1	4
P6	3	3	2	2	2	1	2
P7	3	3	4	2	2	1	1
P8	2	2	1	3	4	1	1
P9	2	2	1	2	4	1	1
P10	3	2	3	3	2	1	1
P11	3	3	1	1	2	1	1
P12	3	2	3	2	2	1	1
P13	1	2	1	4	3	1	1
P14	3	3	1	2	2	1	1
P15	3	2	2	2	4	1	1
P16	2	1	1	3	2	1	1
P17	3	2	3	2	2	1	1
P18	2	2	1	2	2	1	2
P19	2	2	1	1	2	3	1
P20	2	2	1	2	2	1	1
P21	3	3	1	1	4	3	1
P22	3	3	2	1	2	1	1
P23	3	3	1	1	4	3	1
P24	4	3	2	1	2	2	1
P25	2	1	1	2	2	1	1
P26	2	1	1	3	2	1	1
P27	3	3	1	1	4	1	1
P28	2	2	1	1	2	1	1
P29	2	3	1	1	2	3	1
P30	3	3	1	2	4	1	1
P31	4	3	1	1	2	3	1
P32	3	2	2	2	4	3	1
P33	4	3	1	2	2	1	1
P34	3	3	1	3	2	3	1
P35	2	2	1	3	2	3	1
P36	4	3	1	2	3	1	1
P37	3	3	1	1	4	3	1
P38	3	2	1	1	2	1	1
P39	3	3	2	1	4	1	2
P40	2	2	1	1	3	1	1
P41	3	2	1	2	2	3	1

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P42	3	3	2	1	2	1	1
P43	2	2	1	2	2	1	1
P44	3	3	1	1	2	3	1
P45	4	3	2	1	2	1	1
P46	4	3	1	2	2	1	3
P47	2	2	1	2	3	1	1
P48	3	3	1	3	3	1	1
P49	3	3	1	2	2	1	1
P50	3	3	1	1	2	3	1
P51	3	3	1	2	4	1	1
P52	2	1	1	3	3	1	1
P53	4	1	3	3	4	1	1
P54	3	2	2	2	4	1	1
P55	3	3	2	1	2	1	1
P56	3	3	1	3	3	1	1
P57	2	2	1	1	2	1	1
P58	3	3	1	2	2	1	4
P59	3	3	2	2	4	3	1
P60	3	3	1	1	2	1	1
P61	2	1	1	3	3	1	1
P62	4	3	1	2	4	3	1
P63	2	2	1	2	3	1	1
P64	3	3	1	2	2	1	4
P65	2	1	1	3	4	1	1
P66	3	2	1	2	2	1	4
P67	2	2	1	2	4	1	1
P68	3	1	3	2	2	1	4
P69	4	3	1	3	2	1	1
P70	2	1	2	2	2	1	1
P71	3	3	1	1	2	3	1
P72	3	3	2	2	4	1	2
P73	3	3	1	2	4	1	1
P74	3	3	1	3	3	1	1
P75	4	2	1	3	2	3	1
P76	3	3	2	1	2	1	1
P77	4	3	1	3	2	3	1
P78	3	3	1	1	2	3	1
P79	4	3	2	3	2	1	1
P80	2	2	1	3	2	3	1
P81	3	3	1	1	2	1	1
P82	3	3	1	2	3	1	1
P83	3	1	3	1	4	1	1
P84	3	3	1	2	3	3	1
P85	3	3	1	1	2	1	1

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P86	4	3	2	2	2	1	1
P87	3	2	1	2	3	1	1
P88	2	1	1	2	2	1	1
P89	3	3	1	2	3	1	1
P90	3	2	3	2	3	1	1
P91	3	1	1	2	2	1	1
P92	2	2	1	1	2	3	1
P93	4	3	1	1	3	3	1
P94	3	3	2	1	2	1	1
P95	3	3	1	2	2	3	1
P96	2	2	1	3	3	1	1
P97	2	1	2	3	4	1	1
P98	3	3	2	3	2	1	1
P99	2	1	1	3	2	1	1
P100	3	3	1	1	3	1	4
P101	3	3	1	1	4	1	2
P102	3	3	1	1	2	1	1
P103	3	3	1	2	2	1	1
P104	2	1	1	3	4	1	1
P105	3	3	1	2	2	1	1
P106	3	3	1	1	3	1	1
P107	3	3	1	2	2	3	1
P108	4	3	2	1	4	1	1
P109	4	2	1	3	4	1	1
P110	3	3	1	3	2	1	1
P111	4	3	1	2	2	3	1
P112	3	2	3	2	3	3	1
P113	4	2	3	3	4	1	4
P114	2	2	1	3	3	1	1
P115	3	3	2	1	3	1	1
P116	3	3	2	2	2	3	1
P117	2	1	1	1	2	1	1
P118	3	3	1	1	3	1	1
P119	3	2	1	1	2	3	1
P120	2	1	1	2	2	1	1
P121	3	3	1	2	3	1	1
P122	3	2	3	2	3	1	1
P123	3	1	1	2	2	1	1
P124	2	2	1	1	2	3	1
P125	4	3	1	1	3	3	1
P126	3	3	2	1	2	1	1
P127	3	3	1	2	2	3	1
P128	2	2	1	3	3	1	1
P129	2	1	2	3	4	1	1

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P130	3	3	2	3	2	1	1
P131	2	1	1	3	2	1	1
P132	3	3	1	1	3	1	4
P133	3	3	1	1	4	1	2
P134	3	3	1	1	2	1	1
P135	3	3	1	1	2	1	1
P136	3	3	1	2	3	1	1
P137	3	1	3	1	4	1	1
P138	3	3	1	2	3	3	1
P139	3	3	1	1	2	1	1
P140	4	3	2	2	2	1	1
P141	3	2	1	2	3	1	1
P142	3	3	2	1	3	1	1
P143	3	3	2	2	2	3	1
P144	2	1	1	1	2	1	1
P145	3	3	1	1	3	1	1
P146	3	2	1	1	2	3	1
P147	3	3	1	2	2	1	1
P148	2	1	1	3	4	1	1
P149	3	3	1	2	2	1	1
P150	3	3	1	1	3	1	1
P151	3	3	1	2	2	3	1
P152	4	3	2	1	4	1	1
P153	4	2	1	3	4	1	1
P154	3	3	1	3	2	i	1
P155	4	3	1	2	2	3	1
P156	3	2	3	2	3	3	1
P157	4	2	3	3	4	1	4
P158	2	2	1	3	3	1	1
P159	3	3	1	1	2	3	1
P160	4	3	2	1	2	1	1
P161	2	1	2	2	2	1	1
P162	3	3	1	1	2	3	1
P163	3	3	2	2	4	1	2
P164	3	3	1	2	4	1	1
P165	3	3	1	3	3	1	1
P166	4	2	1	3	2	3	1
P167	3	3	2	1	2	1	1
P168	4	3	1	3	2	3	1
P169	3	3	1	1	2	3	1
P170	4	3	2	3	2	1	1
P171	2	2	1	3	2	3	1
P172	4	3	1	2	2	1	3
P173	2	2	1	2	3	1	1

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P174	3	3	1	3	3	1	1
P175	3	3	1	2	2	1	1
P176	3	3	1	1	2	3	1
P177	3	3	1	2	4	1	1
P178	2	1	1	3	3	1	1
P179	4	1	3	3	4	1	1
P180	3	2	2	2	4	1	1
P181	3	3	2	1	2	1	1
P182	3	3	1	3	3	1	1
P183	2	2	1	1	2	1	1
P184	3	3	1	2	2	1	4
P185	3	3	2	2	4	3	1
P186	3	3	1	1	2	1	1
P187	2	1	1	3	3	1	1
P188	2	2	1	2	2	1	1
P189	3	3	1	1	2	1	1
P190	4	3	1	2	4	3	1
P191	2	2	1	2	3	1	1
P192	3	3	1	3	2	3	1
P193	2	2	1	3	2	3	1
P194	4	3	1	2	3	1	1
P195	3	3	1	1	4	3	1
P196	3	2	1	1	2	1	1
P197	3	3	2	1	4	1	2
P198	2	2	1	1	3	1	1
P199	3	2	1	2	2	3	1
P200	3	3	2	1	2	1	1
P201	2	2	1	2	2	1	1
P202	2	2	1	2	4	1	1
P203	3	1	3	2	2	1	4
P204	4	3	1	3	2	1	1
P205	3	3	1	2	2	1	4
P206	2	1	1	3	4	1	1
P207	3	2	1	2	2	1	4
P208	3	2	3	3	2	1	1
P209	3	3	1	1	2	1	1
P210	3	2	3	2	2	1	1
P211	1	2	1	4	3	1	1
P212	3	3	1	2	2	3	1
P213	1	1	2	4	3	1	1
P214	2	1	1	3	3	1	1
P215	3	2	2	2	4	1	1
P216	2	1	2	4	3	1	1
P217	3	3	1	2	2	1	1

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P218	1	2	1	4	3	1	1
P219	3	3	1	2	2	3	4
P220	2	2	1	3	3	1	1
P221	3	3	1	3	2	1	1
P222	3	2	2	2	4	1	1
P223	2	1	1	3	3	1	1
P224	2	1	1	2	2	1	1
P225	2	1	1	3	2	1	1
P226	3	3	1	1	4	1	1
P227	2	2	1	1	2	1	1
P228	2	3	1	1	2	3	1
P229	3	3	1	2	4	1	1
P230	4	3	1	1	2	3	1
P231	3	2	2	2	4	3	1
P232	4	3	1	2	2	1	1
P233	3	2	3	2	2	1	1
P234	3	2	1	2	2	1	2
P235	2	2	1	3	4	3	1
P236	2	2	1	2	3	1	1
P237	3	3	1	1	4	3	1
P238	3	3	2	1	2	1	1
P239	3	3	1	1	4	3	1
P240	4	3	2	1	2	2	1
P241	4	2	2	2	3	1	1

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Data Sheet of Determinants of Bottle Feeding

Code	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22
P1	4	1	1	1	4	1	2	1	4	5	5	5	1	1	1	4	1	1	1	1	3	1
P2	5	1	1	1	4	1	5	1	3	3	5	1	1	4	5	2	1	4	1	1	3	5
P3	1	1	1	1	1	1	2	2	4	5	4	1	1	1	5	4	1	2	3	1	3	1
P4	5	5	1	1	5	1	1	3	2	5	5	2	1	5	2	1	1	2	1	1	2	2
P5	4	5	4	1	2	1	1	2	5	5	5	1	1	1	5	4	2	1	1	1	3	1
P6	2	1	1	1	4	1	1	1	2	5	4	1	1	1	2	4	1	1	4	1	1	1
P7	1	1	1	1	2	1	1	1	4	5	3	1	4	1	1	4	1	2	1	1	3	1
P8	5	1	1	5	1	1	5	1	4	5	5	1	4	5	5	5	1	4	5	1	5	1
P9	5	1	1	1	1	1	1	1	5	5	5	1	5	1	1	5	1	1	5	1	5	1
P10	1	5	1	1	5	1	1	1	1	5	1	3	1	1	1	5	1	1	3	5	3	1
P11	1	5	1	1	1	1	1	2	5	5	5	1	1	1	1	3	1	1	3	1	3	1
P12	1	1	3	1	5	1	1	1	1	1	1	1	3	1	5	1	1	2	1	1	2	1
P13	1	5	1	1	2	3	1	1	1	1	5	1	1	1	5	1	1	3	1	1	1	1
P14	1	1	1	2	5	1	1	1	5	1	5	1	1	1	2	5	1	1	1	1	3	1
P15	5	1	1	5	4	1	1	1	1	5	5	1	5	2	3	5	1	1	5	1	4	3
P16	1	5	3	1	3	1	5	3	5	1	5	1	1	5	5	2	5	1	3	1	1	5
P17	5	1	1	1	5	2	1	1	4	4	1	3	1	1	1	4	2	3	2	1	3	1
P18	5	1	4	1	5	2	1	1	2	4	5	1	1	1	1	2	1	1	1	1	5	3
P19	5	1	3	3	5	1	2	5	4	5	1	1	2	3	1	1	1	3	1	1	5	1
P20	1	1	1	4	4	1	2	1	1	5	4	1	3	2	1	5	1	3	5	1	4	1
P21	4	5	2	5	4	1	1	2	4	5	1	5	3	2	1	1	1	3	5	1	2	2
P22	1	1	3	1	2	3	1	3	1	5	5	1	5	1	1	4	1	3	3	1	4	3
P23	5	1	3	1	4	1	1	3	5	3	1	1	1	1	1	4	1	1	4	1	4	5
P24	5	1	1	2	4	1	1	3	5	5	3	1	1	1	3	5	1	1	4	5	3	1
P25	1	4	1	1	2	1	3	1	4	1	5	1	1	3	4	1	1	4	1	1	1	3
P26	1	1	4	1	1	1	3	1	4	1	5	1	1	1	2	4	5	1	1	5	1	1

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P27	1	1	1	5	4	1	1	1	1	5	4	1	1	1	1	1	1	1	1	1	2	1
P28	1	5	1	1	4	1	4	4	4	1	5	1	1	4	5	1	1	1	1	1	3	4
P29	5	1	1	1	4	1	1	1	1	5	1	1	1	1	1	4	1	4	1	4	4	4
P30	2	5	1	4	1	1	1	1	1	5	4	1	4	1	1	1	1	1	5	1	4	1
P31	1	1	4	1	5	1	1	1	5	4	1	1	1	1	5	5	1	1	4	1	1	1
P32	5	1	1	1	5	1	1	4	1	4	4	1	1	1	1	4	1	1	1	1	4	4
P33	5	1	1	1	3	1	1	1	5	1	2	1	1	1	2	4	1	1	1	5	3	5
P34	4	1	1	4	4	1	1	1	1	5	1	1	1	1	1	4	1	1	5	1	2	1
P35	5	5	1	1	3	1	1	1	4	1	1	1	1	4	4	1	5	1	1	5	3	5
P36	5	1	1	1	5	1	1	1	5	4	5	1	1	1	5	4	1	1	1	1	2	1
P37	1	1	1	5	2	1	3	1	1	5	4	1	1	3	1	1	1	1	5	1	3	1
P38	3	1	1	1	1	1	1	3	5	1	5	1	1	1	5	1	1	5	1	1	5	1
P39	5	1	3	1	5	1	1	1	5	1	1	1	1	3	1	3	1	1	1	1	3	3
P40	5	1	3	5	1	1	1	1	1	5	1	1	5	1	1	3	1	1	5	1	5	1
P41	5	1	1	1	5	1	1	1	5	1	5	1	1	1	4	1	1	1	1	1	3	1
P42	5	1	1	1	5	1	1	1	4	1	1	3	1	1	1	5	1	5	1	5	1	5
P43	5	4	1	1	5	1	1	1	5	1	5	1	1	1	5	5	1	1	5	1	4	1
P44	1	1	2	1	5	4	1	1	5	1	5	1	1	1	2	1	1	1	2	1	3	1
P45	5	1	1	3	5	1	1	3	1	5	1	1	5	1	3	3	1	1	5	1	1	1
P46	1	1	1	1	5	2	1	1	5	1	5	1	1	1	1	5	1	5	5	3	3	1
P47	2	1	3	1	2	1	3	3	5	1	5	1	1	1	5	2	1	1	2	1	5	4
P48	2	1	1	1	5	3	2	2	5	5	5	1	1	1	2	5	1	1	5	1	3	1
P49	5	1	1	1	5	1	1	3	5	1	5	1	2	1	5	5	1	2	2	1	5	1
P50	1	1	3	4	5	1	5	4	5	5	1	1	2	4	1	5	1	4	5	1	1	1
P51	5	1	1	1	2	1	5	1	1	5	1	3	1	5	5	2	1	5	2	1	2	1
P52	5	5	1	1	2	1	2	3	5	1	1	1	2	1	5	2	5	1	5	1	1	2
P53	1	1	3	1	5	3	4	1	5	5	5	1	1	4	5	5	5	2	3	1	4	1
P54	1	1	3	1	5	3	4	1	5	5	5	1	1	4	1	5	3	1	3	1	4	1
P55	5	1	1	1	1	3	1	2	5	1	5	1	1	1	5	1	1	1	3	1	3	1

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P56	1	1	1	3	5	1	1	1	1	5	5	1	5	1	1	3	1	3	3	1	1	1		
P57	1	1	1	1	3	1	1	1	5	1	1	1	1	1	5	5	1	1	3	5	1	2		
P58	1	3	3	1	5	1	1	1	5	5	5	1	1	1	4	5	1	1	5	1	5	1		
P59	5	1	3	5	1	1	1	1	1	5	1	1	5	1	1	5	1	5	5	1	5	1		
P60	1	3	1	1	5	1	1	3	5	5	5	1	1	1	3	3	1	1	1	2	3	1		
P61	1	1	1	1	3	1	1	1	5	1	5	1	1	1	5	5	1	1	3	5	1	1		
P62	5	1	1	1	5	1	1	1	5	2	5	1	1	1	5	1	1	2	3	1	5	1		
P63	5	1	1	1	5	2	1	1	1	2	1	3	1	1	1	5	1	3	5	1	3	1		
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P83	5	1	1	1	5	1	1	1	5	1	1	1	1	1	5	1	5	1	3	1	1	3		
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P112	5	3	1	1	1	3	3	4	5	1	4	1	3	4	1	5	1	1	2	1	2	1
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P170	5	1	1	1	5	1	1	3	1	1	5	1	1	1	1	3	1	1	3	1	1	1
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P229	2	5	3	4	1	1	1	1	1	5	4	1	4	1	1	1	1	1	5	1	4	1	

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P230	1	1	4	1	5	1	1	2	5	4	1	1	1	1	5	5	1	1	4	1	1	1
P231	5	1	1	1	5	1	1	4	1	4	4	1	1	1	1	4	1	1	1	1	4	4
P232	5	1	2	1	3	1	1	1	5	1	2	1	1	1	2	4	1	1	1	2	3	5
P233	1	1	1	1	5	1	1	3	5	1	1	1	1	1	1	4	1	3	1	1	3	1
P234	5	1	4	1	5	1	1	3	1	5	5	1	1	1	2	2	1	1	3	1	5	5
P235	1	2	2	3	5	3	1	4	5	5	1	3	2	3	1	1	1	1	1	1	5	1
P236	1	1	1	4	5	1	2	3	1	5	4	1	3	2	1	5	1	1	5	1	4	1
P237	4	5	1	5	4	1	1	1	4	5	1	1	3	2	1	1	1	1	5	1	2	1
P238	1	1	1	1	2	1	1	3	1	5	5	1	5	1	1	4	1	1	3	1	4	1
P239	5	1	2	1	4	1	1	3	5	3	1	1	1	1	1	4	1	1	4	1	4	3
P240	5	1	1	2	4	1	1	3	5	5	3	1	1	1	3	5	1	1	4	1	3	1
P241	1	1	1	4	5	1	1	2	5	5	1	1	2	1	5	5	1	1	5	1	5	1

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